

**HERBERT ANDREAS WELKER**

# **Dictionary Use**

**A General Survey of Empirical Studies**

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**Brasília  
Author's Edition  
2010**

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Proofreading by Robert K. Walker, EdD

ISBN: 978-85-911396-0-6

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W446d Welker, Herbert Andreas  
Dictionary use: a general survey of empirical studies /  
Herbert Andreas Welker. – Brasília: Author's Edition,  
2010.  
382 pp.

1. Lexicography I. Title

CDU 801.3  
CDD 413

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## Preface

This book is an English version of a book originally written in 2006 in Brazil – in Portuguese. Some readers – among them Robert Lew, whose review was published in the *International Journal of Lexicography* (vol. 20.4) – suggested that it be translated into English, because worldwide only few metalexicographers, or students of lexicography, read Portuguese.

Since there are relatively few Brazilian works on dictionary use, and since this field is quite unknown to many linguists and language teachers, the original preface began with the following question: “Might it be worthwhile publishing a whole book on research into dictionary use?” On an international scale, of course, this question is superfluous, seeing that there already exist several books on the subject, e.g. *Using Dictionaries* (edited by B. T. S. Atkins, 1998), *The Use and Abuse of EFL Dictionaries* (Nesi 2000), and *Research on Dictionary Use in the Context of Foreign Language Learning* (Tono 2001). And there is a book written in German by Wiegand (1998) in which more than 800 pages are devoted to dictionary use.

So, why this book? The reason is that, whereas Wiegand (1998) mainly discusses theoretical issues, and in Atkins (1998), Nesi (2000) and Tono (2001) there are reports of only a few empirical studies, I have summarized many reports in order to provide a broad survey. In *Pedagogical Lexicography Today* (1998), Dolezal & McCreary present summaries of 521 articles, books, dissertations and theses in the field of lexicography. However, only a few of them deal with dictionary use, the summaries (or “annotations”) are very short (from two to fifteen lines), and they are ordered alphabetically. Here, on the contrary, they are **not in alphabetical order but rather included in the various chapters according to the type of investigation**, and they are, for the most part, far more detailed.

**My aim is to show students and scholars what has been done and what have been the problems, difficulties and results of empirical research on dictionary use.**

Unfortunately, I did not have access to all the reports – some of which have not been published or exist in only few libraries in certain countries – and I suppose that there are quite a few I have not even heard about. All those to which I did not have access, but which I found mentioned elsewhere, are included in this book anyway; and I quote or summarize what other authors have said about them. In such cases, the works in which I read those remarks are indicated **in square brackets** beneath the name of the author of the respective report – and, of course, I cannot take responsibility for the veracity of what was said.

In each chapter and subchapter, the investigations are ordered **chronologically**. When several reports were published in the same year, they are ordered **alphabetically**.

My intention was to publish this English version in book form. For editorial reasons, it had to be shorter than the Portuguese original. So I shortened the summaries of several research reports. Others may have been modified, and some introductory parts were either modified or even eliminated.

When this had been done, I decided to publish this work not as a printed book but as an e-book on the internet – which means that the summaries could actually have been longer; notwithstanding this greater flexibility, I have left them as they were.

Then I updated this general survey, including summaries of studies published prior to 2006 – but which I had not known about when the original book was concluded – as well as investigations carried out since then. Due to my lack of time, these summaries are, for the most part, shorter than the earlier ones. Frequently I only quote the abstract, and in other cases a large part of the summaries is made up of quotations.

The 220 investigations in the Portuguese version have been expanded to the 320 empirical studies here. Others may have been reported in master's dissertations and doctoral theses or even in published papers of which I am unaware. Should I come across them in the future, I will be able to update this e-book.

I wish to thank several authors for having sent me one or more of their papers (e.g. Andrea Abel, Reinhard R. K. Hartmann, Philippe Humblé, James Ronald, Sven Tarp, Reinhold Werner, Herbert Ernst Wiegand). Reports on empirical studies summarized in this book were received from: Marney Pereira Conceição (Brazil), Jerônimo Coura Sobrinho (Brazil), Anna Dziemianko (Poland), Camila Höfling (Brazil), Batia Laufer (Israel), Vilson J. Leffa (Brazil), Robert Lew (Poland), Vera Müller (Brazil), Carolin Müller-Spitzer (Germany), Hilary Nesi (United Kingdom), Martina Nied Curcio (Italy), Britta Nord (Germany), María del Mar Sánchez Ramos (Spain), Antje Töpel (Germany), Serge Verlinde (Belgium), Regiani A. S. Zacarias (Brazil). I am very grateful to Johan du Plessis, editor of *Lexikos*, for having sent me some articles published in that South-African journal, which is specialized in lexicography. My special thanks go to Robert Lew, who has proved helpful in several ways.

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## Acronyms

### 1. Types of dictionaries

BD	Bilingual dictionary
BD <sub>L1-L2</sub>	Bilingual dictionary (direction L1→L2)
BD <sub>L2-L1</sub>	Bilingual dictionary (direction L2→L1)
BED	Bilingual electronic dictionary
BLD	Bilingual learners' dictionary
ED	Electronic dictionary
L1D	General monolingual dictionary for native speakers
L1SD	Monolingual school dictionary for native speakers
LDT	Learners' dictionary with translation (elsewhere called "bilingualised", "semibilingual", or "hybrid" dictionary)
MD	Monolingual dictionary (acronym used when it is not clear whether the monolingual dictionary is an L1D or an MLD)
MED	Monolingual electronic dictionary
MLD	Monolingual learners' dictionary
PD	Paper dictionary

### 2. Dictionaries most cited

ALD – *The Advanced Learner's Dictionary of Current English* (cf. OALD)

CALD – *Cambridge Advanced Learner's Dictionary*

CIDE – *Cambridge International Dictionary of English*

COBUILD – *Collins COBUILD English Language Dictionary*

LDOCE – *Longman Dictionary of Current English*

MEDAL – *MacMillan English Dictionary for Advanced Learners of American English*

OALD – *Oxford Advanced Learners' Dictionary of Current English*

OALDCE = OALD

(The numbers indicate editions; e.g. LDOCE3 = 3<sup>rd</sup> edition of LDOCE.)

### 3. Other acronyms

EAP	English for Academic Purposes
EFL	English as a Foreign Language
ESP	English for Special Purposes
FL	Foreign language (foreign language learned or used in one's own country; in cases in which the difference between this conception of FL and that of L2 is not important, it may refer to any language which is not one's first language)
L1	First language; mother tongue
L2	Second language (language learned or used in a country where this language is not the first language)
TAP	Think-aloud protocol

## 1. Introduction

In many papers on dictionary use there is a certain lack of clarity, when different types of situations of use are mingled together, reflecting improper generalizations made on the basis of the results of studies of one particular situation. It is probably those generalizations which have led theorists of language teaching, and with them language teachers, to condemn or discourage the use of dictionaries.

In this book, in which I intend to present a general survey on research on dictionary use, summarizing most of the existing reports, I clearly distinguish among several circumstances of use.

But what is an improper generalization?

Let's suppose that someone is studying the effects of the use of monolingual English dictionaries by French high school students during the reading of a text, and that he or she observes that the use of those dictionaries has worsened comprehension or reduced reading speed. It would be an improper generalization to say "dictionary use in language learning is harmful". Research results must not be extrapolated to other situations.

Another important remark must be made: even within specific situations, the alleged results may not be reliable, because the researcher has not taken all the necessary measures to guarantee reliability. In some of my summaries I will make certain critical remarks about procedures and results. It is, however, unfortunately not possible in this general survey to evaluate all the studies that have been done.

### 1.1 Situations of use

According to Wiegand's (1998: 825) definition, one can speak of a situation of dictionary use "when a person is using a copy of a dictionary communicatively". By "using a copy of a dictionary communicatively", he is clearly referring to look-ups with the aim of learning something which the person does not already know or is not sure of.

The term *situation of use* has already been employed by Wiegand (1977: 70-81). In his "typology of situations of use for common alphabetical monolingual dictionaries", he distinguished: a) look-ups motivated by "actual communication conflicts", i.e. look-ups motivated by lack of lexical knowledge needed in communication, from b) other types of look-ups (e.g. in vocabulary learning or in the analysis of dictionaries). The first type of situation was subdivided into "reading of texts" and "text production". According to the author, in each of these situations look-ups may have various causes; for example, the user may not know the meaning or how to use a certain lexical item.

Wiegand (1987) wanted to establish an “action-theoretical” basis for dictionary use research. After having defined what an action is, he defined the action of dictionary use. In his view, when describing such an action, one should consider the following aspects: the user, the circumstance of use (e.g. reading), the cause of the look-up (e.g. ignorance of the meaning of a lexical item), the immediate motive (e.g. the lack of comprehension of a word in a text), the time, place, duration and manner of the look-up, the question with which one turns to a dictionary, the look-up action, the information looked for, and the consequence of the look-up. Then Wiegand (p. 197 ff.) defined the concept of *genuine purpose of a dictionary* (the fact that the dictionary can be “used to gain from lexicographical data [...] information about language or about the non-linguistic world, but not about the dictionary used”),<sup>1</sup> and distinguished several types of dictionary use according to the objectives of the user: 1) usual, or normal, use of a dictionary as a reference work; 2) usual use of a dictionary as a text to be read (which occurs when one reads entries for pleasure or to learn something about the language in which they are written); 3) unusual dictionary use, in order to know something about it (for example, when one wants to know if some lexical item is lemmatized or, in general, when one wants to analyse the dictionary); 4) unusual, or anomalous, use of a dictionary, when it is not used as such (for example, if it is put under an object to raise it higher); 5) the use of a dictionary to learn about the use of dictionaries. Wiegand did not say whether the fifth type is usual or unusual. In Wiegand (1998: 296), he called it “propedeutical use”.

Tarp (2009: 3), employing the expression *usage* instead of *use*, considers this classification “somewhat problematic”, and asks why the third type should be anomalous when the author considers the second type to be usual. In his opinion, only the fourth type is “lexicographically irrelevant”. On the other hand, he agrees with Wiegand that only the first purpose involves “consultation of dictionaries as reference works”. As to the concept of *situation*, Tarp distinguishes “two entirely different situations relevant to lexicographical user research, i.e. the *user situation* which is the extra- or pre-lexicographical situation where the need to consult a dictionary occurs for a *potential user*, and the *usage situation* where the user, now transformed into *actual user*, takes action in order to satisfy his or her need consulting a dictionary or another lexicographical tool”.<sup>2</sup>

It was mentioned that Wiegand classifies reading or text production as types of *circumstances of use*. Hulstijn & Atkins (1998: 12) call such activities *tasks*, and for Tono (2001: 56) they are *contexts of use*. Tono enumerates, for example, “grammar exercises”, “writing an essay”, “browsing the internet” and “pleasure reading”. I will use the term *circumstance of use*.

In English, all metalexicographers employ the noun *look-up* (or *lookup*). A distinction should be made between specific look-ups and categories of look-ups (e.g. the category “look up the equivalent” or “look up synonyms”), but when there is no possibility of misunderstanding, I will simply use *look-up* in both cases.

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<sup>1</sup> Wiegand (1998: 299) presents the following definition: “The genuine purpose of a dictionary is that it is used in order to obtain information on those properties of linguistic expressions which belong to the domain of the dictionary; this information can be accessed via lexicographic data in partial texts with an outer access structure.”

<sup>2</sup> The distinction between *potential user* and *actual user* echoes Wiegand’s distinction between *user-ex-actu* and *user-in-actu*.

Some authors differentiate between *searches* and *look-ups* (e.g. Atkins & Varantola 1997, Varantola 1998; Livbjerg & Mees 2003 employ *consultation* instead of *search*). In her study of dictionary use in translation, Varantola (1998: 182) explained: “The term ‘look-up’ denotes the act of looking something up once; the term ‘search’ is used to designate all the look-ups (whether in the same or different dictionaries) relating to a single translation problem. Thus a search consists of one or more look-ups.”

## 1.2 Different divisions of research topics

Hulstijn & Atkins (1998: 7-9) classify “empirical investigations in which the dictionary was involved in one way or another” under seven headings:

- The attitudes, needs, habits and preferences of dictionary users
- Text or word comprehension
- Text or word production
- Vocabulary learning
- Dictionary-related performance in testing
- Teaching dictionary skills
- Critical comparisons and reviews of dictionaries.

The authors admit that “strictly speaking” the last category “does not belong to the domain of empirical studies of dictionary use”. It is exactly for this reason that I do not include such studies in this book.

In many works dealing with empirical research on dictionary use the word *empirical* is employed, but nowhere does it seem to have been explained. Usually *empirical* refers to observation or experience. Thus, analyses of dictionaries are certainly empirical, but research on dictionary **use** is only empirical if **users** are involved in some way (asked, observed or tested).<sup>3</sup>

McCreary & Dolezal (1999: 110 f.) quote Dolezal & McCreary (1996), who had published an “annotated bibliography” of 178 studies on dictionary use, divided into five groups:

- “Experiential studies [...] which have sought to understand the shortcomings of currently available dictionaries and how to improve them; [...].”
- “Comparative studies [...] which have looked at the relative advantages and disadvantages of certain types of dictionaries, [...].”
- “Users’ needs and skills surveys” [...].
- “Cultural articles [...].”
- The fifth group, encompassing 36 “experimental or quase-experimental studies”, was divided up into: a) “20 studies that apply methods from reading comprehension to dictionary use by EFL students or other foreign language learners [...]”; and b) “16 studies that apply methods from applied linguistics

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<sup>3</sup> Hulstijn & Atkins (ibid.: 9) explain that they included comparisons and reviews because “such investigation involves direct use of dictionaries by the experts reviewing the works”.

primarily to examine elements of dictionary use that are termed ‘looking-up’ strategies [...].”

In her “review of research into dictionary use and dictionary requirements”, Nesi (2000: 3-56) makes the following distinctions:

- Questionnaire-based research
- Test-based research investigating
  - dictionary users’ performance in reading tests
  - the effect of dictionaries on vocabulary learning
  - dictionary users’ skills
- Observation-based research, divided into
  - observation of natural instances of dictionary use
  - observation of controlled instances of dictionary use.

After a brief history of “user-oriented dictionary research”, Tono (2001: 15-58) discusses such research in two chapters, mentioning various studies and their results. In the first chapter he deals with investigations into “dictionary use in language learning”, distinguishing “vocabulary learning”, “decoding activities” and “encoding activities”. The second one (p. 37-58) is devoted to the analysis of needs and skills of dictionary users.

In a very critical paper, Tarp (2009: 4) expresses the opinion that “it is necessary to do research into”:

- types of *user situations*
- types of *users*
- types of *user needs*
- the users’ *usage* of a dictionary
- the degree of *satisfaction* of the user needs.

In this book the empirical user studies (i.e. the summaries of research reports) are divided in a different way:

- Chapter 2: questionnaire surveys (or interviews) about facts (e.g. the owning of dictionaries), attitudes, ideas and opinions of dictionary users (cf. the first item in Hulstijn & Atkins’ and in Nesi’s lists, above)
- Chapter 3: studies which investigated how dictionaries are actually used
- Chapter 4: research into the effects of dictionary use
- Chapter 5: studies of specific topics and the use of specific dictionaries
- Chapter 6: investigations on the use of electronic dictionaries
- Chapter 7: studies on the effect of the teaching of dictionary use.

Although most research has been devoted to the use of dictionaries in foreign language learning (see, for example, the titles of Nesi 2000, Tono 2001, Wingate 2002, Thumb 2004), chapter 2 is subdivided into studies in which the informants or subjects were: a) native speakers or b) non-native speakers.

Chapter 4 is subdivided according to circumstances of use: 4.1 – reading comprehension; 4.2 – writing; 4.3 – translation; 4.4 – vocabulary learning.

Chapter 5 is subdivided into studies of actual use and of the effects of use.

I have treated investigations of the use of electronic dictionaries in a special chapter, because of the enormous difference between these and print dictionaries. In that chapter, I have distinguished between electronic glosses and real electronic dictionaries, since in my opinion they are quite different from one another.

Many authors have written about the necessity of teaching dictionary use, but there are very few empirical studies of the effects of such teaching. These are summarized in chapter 7.

I have not included studies in which the authors analysed dictionaries to see which errors committed by students could have been avoided if these reference works had been consulted. Articles of this kind are, for example, Herbst (1985), Huang (1985), Meara & English (1987) and Nesi (1987).<sup>4</sup>

One might think that studies which reveal that user errors have been caused by the shortcomings of the dictionary would show the effects of dictionary use. However, such errors could have been foreseen in a simple dictionary analysis (cf. the articles cited in the previous paragraph). Thus, if in such empirical user studies there was no evaluation of the results of the language activity (writing, translating, etc.) during which the dictionary was used, I did not classify them as studies of the effects of dictionary use (chapter 4), but as investigations of actual dictionary use (chapter 3).

### 1.3 Methods

Dictionary use may be investigated using several methods.

Ripfel & Wiegand (1988: 493-497) briefly discuss the advantages and disadvantages of questionnaires, user protocols and tests.

In his discussion, Zöfgen (1994: 39-50) added interviews and direct observation.

Nesi (2000:3-56) devoted the entire first chapter of her book to this topic, distinguishing and discussing questionnaires, tests and observation, summarizing, in more or less detail, certain reports of research undertaken employing these methods.

Tono (2001: 66-72) left the discussion of methods until the end of the first part of his book. He distinguished “participant observation”, “surveys”, “accounts” (i.e. protocols),

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<sup>4</sup> A bit different is Wolf-Bleiß's (2004) study. This author deals with the questions submitted to a (German) linguistic aid service. She organizes the questions into categories and shows in which cases dictionaries would have helped. Similar examples are Montgomery (1983) and Höhne (1991).

There are also studies – cited by several authors in their surveys on dictionary use research – in which students participated, yet not as users but as something like research assistants. For example, Bujas (1975) asked, in four consecutive semesters or terms, 18 students to record (write down) during their reading all those lexical items which were lacking or inadequately treated in a certain bilingual dictionary. Opitz (1979) asked his ESP students to mark, in a text of about 1,000 words, those items which they considered as belonging to the vocabulary of navigation. Then he himself checked in several dictionaries if these lexemes were lemmatized.

“correlational research” (in which the relation between two or more variables is investigated), “*ex post facto* research” (which studies possible cause-and-effect relationships), and experiments.<sup>5</sup>

The most exhaustive discussion of methods is to be found in Wiegand (1998: 568-1022).

### 1.3.1 Questionnaire surveys

The first questionnaire survey on dictionary use was done in 1955 (a report was published by Barnhart in 1962). About this method of collecting data, Humblé (1997 [2001: 44]) stated: “Questionnaires were the first indication of a changing relationship between the lexicographers and their audience.” As a matter of fact, at the First Conference on Lexicography, held at Bloomington, Indiana in 1960, Householder uttered his now well-known sentence: “Dictionaries should be designed with a special set of users in mind and for their specific needs” (Householder 1962 [1967: 279]). According to Zöfgen (1991: 2896), this recommendation “marked a turning point in the history of lexicography insofar as it laid the foundations for the user perspective”.

Of course Householder was not the first to give importance to the user. For example, in the 1930s the “founding fathers” of the learner’s dictionary had the EFL learner in mind, and Sčerba/Shcherba (1940) remarked that there should be different dictionaries for different users.

However, after Barnhart’s survey it was not until the 1970s that new studies on the relationship between the users and their dictionaries were undertaken.

Wiegand (1977: 60 ff.), although dealing only with monolingual dictionaries for native speakers, mentioned the necessity to carry out empirical studies so that lexicographers might write better entries. His idea of an “empirically founded sociology of the dictionary user” was taken over in Hartmann’s (1989) article.

Since almost nothing was known about dictionary use, the surveys undoubtedly did constitute an advance. Nevertheless, from the 1980s on, they have been criticized by many authors (Hatherall 1984: 184, Crystal 1986: 78, Hartmann 1987: 15, Bogaards 1988: 137s., Ripfel & Wiegand 1988: 493s., Zöfgen 1994: 42s., Humblé (1997 [2001: 44]), Wiegand 1998<sup>6</sup>, Nesi 2000: 11 f.). Why?

For the most part, the survey questions belong to the following types:

- a) about facts which are remembered by the informants quite easily (e.g., how many dictionaries they own, when and why they bought them);
- b) about their use of dictionaries;
- c) about their opinions (e.g., if they are satisfied, which dictionary or dictionary type they prefer, what should be improved).

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<sup>5</sup> In the title of item 4.3.7 he mentions “single-case studies”, but he does not deal with them. Diab (1990: 60) distinguishes small-scale from large-scale case studies; and he considered his own investigation to be a large-scale case study, because he had researched the dictionary use of one special and numerous group of users.

<sup>6</sup> In almost one hundred pages, Wiegand deals with questionnaires and makes suggestions for improving this method.

Certainly answers to questions of type (a) are reliable to a certain extent (of course, not all informants will remember all facts to which the questions refer), and the answers to type (c) are just opinions (which, nevertheless, may guide lexicographers and publishing houses in their efforts to make better dictionaries). But the biggest problems are with questions of type (b), which ask, for example:

What do you search most in a dictionary?  
In which circumstance do you consult it most?  
Does the dictionary help (and what is the percentage of success)?  
Which part of the entry helps most?

The answers, given well after utilization, reveal only what users think they generally do, not their actual use. And Hatherall (1984: 184) raised the following questions (quoted by several authors): "Are subjects saying here what they do, or what they think they do, or what they think they ought to do, or indeed a mixture of the three?"

Zöfgen (1994: 43) and other metalexicographers criticized the fact that some survey questions may not be understood, while others are too difficult to answer or may influence the informant. Ripfel & Wiegand (1988: 493) added that the researcher who wants to discover what the user knows about his or her dictionary (e.g. if it contains etymological information) cannot be sure that he or she did not consult it just before answering.

Finally there is one problem which concerns not only surveys but all research methods, i.e. the representativeness of the informants. Undoubtedly questionnaire surveys are advantageous because one can get answers from a great number of users, but in general informants are not selected at random, so that even if the results are correct, they cannot be generalized. According to Zöfgen (*ibid.*: 36), genuine random samples are not possible because one cannot determine the universe of dictionary users in a certain country or of a certain dictionary, and because a correct procedure of selecting a representative sample of all users does not exist.

Quite a number of surveys may be criticized because there were only very few informants. Zöfgen (*ibid.*: 37) mentions those of Snell-Hornby (1984) and El-Sakran (1984), with just 35 and 36 subjects, respectively.

In other cases, the researchers present the results in averages, even though their informants belong to quite distinct categories. Bogaards (1988: 137) cites as examples Tomaszczyk (1979), Hartmann (1983) and Rasmussen (1985). Tomaszczyk's informants were EFL learners, native speakers, teachers and translators, but he divided them into only two groups (students on the one hand, and teachers and translators on the other). Hartmann did not distinguish college students, high school students and teachers, and Rasmussen did not differentiate the informants' nationalities.

For all these reasons, the survey results must not be extrapolated to all users, and frequently they can only be considered valid for the specific group to which the informants belong if confirmed by other studies with the same type of informants. Therefore, Zöfgen (*ibid.*: 43 f.) thinks it would be advantageous if in several surveys the same questionnaire format was utilized. This has already occurred a few times: Greenbaum, Meyer & Taylor (1984) based their questionnaire on Quirk (1973), and Bogaards (1988) and Battenburg (1989) used questionnaires quite similar to those of Tomaszczyk (1979), Baxter (1980), Béjoint (1981) and Hartmann (1983).

In the most recent article on dictionary use research, Tarp (2009: 11) argues that in spite of all the problems, metalexicographers “still unconcernedly carry out user research by means of questionnaires and arrive at conclusions which even a modest knowledge of sociology would show that they have no scientific warrant to draw”.

Nevertheless, I think that in countries or in situations in which nothing is known about dictionary use questionnaire surveys are still useful – provided that they avoid certain pitfalls.

### **1.3.2 Interviews**

The greatest advantage of questionnaires is that with them a great number of informants can be reached, but we have just seen that there are several disadvantages.

Some of the faults of questionnaire surveys may occur in interviews, too, but interviews are better for the following reasons:

- a) the informants cannot “cheat”, i.e. when they are asked what they know about their dictionary, they cannot consult it;
- b) the researcher can give explanations about the questions, if necessary;
- c) he or she can explain lexicographical or grammatical terms, if necessary.

However, as was stated for example by Diab (1990: 61), interviews may be very time-consuming and expensive. Thus it is comprehensible that only a few researchers used this method (Zöfgen 1994: 45 cites Chagunda 1983, Iqbal 1987, and Diab 1990), the first two of which had very few informants (only Diab interviewed a larger number<sup>7</sup>).

Sometimes, interviews were the sole data gathering instrument (e.g. in the case of Chagunda 1983); sometimes, they were combined with a questionnaire survey (Diab 1990). In such a combination, it is possible to verify in the interview the responses given to the questionnaire, and, of course, ask others.

Interviews may have the same format as questionnaires (with the same type of questions) or have an “open” format, in which the informant speaks freely about his or her relationship with dictionaries. Obviously, the analysis of the data collected in this second way – even when the interview is taped – is much more difficult (cf. Diab 1990: 61), since the relevant pieces of information have first to be extracted and classified.

The few studies in which interviews were made are summarized in chapter 2 or 3.

### **1.3.3 Observation**

Zöfgen (1994: 46) and Tono (2001: 67) speak about this method in less than one page. Nesi (2000: 33-54), besides discussing briefly its advantages and problems, summarizes and comments on several investigations in which, according to her, it was employed.<sup>8</sup> She argues:

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<sup>7</sup> Zöfgen (*ibid.*: 45) says that Diab interviewed a “large group of informants”; actually, they were precisely 41 students and 6 teachers.

<sup>8</sup> For example, Hatherall (1984), cited by her, did not use this method.

As in questionnaire-based research, observation-based studies are concerned with generating hypotheses, rather than testing them. However, whereas the data regarding user behaviour obtained by questionnaire may be suspect, because subjects misunderstand questions, fail to recall, or falsely claim to behave in ways they perceive to be desirable, observation-based research avoids these problems by setting subjects observable tasks, and collecting data either during the task itself, or immediately following the completion. (Nesi 2000: 33)

Hatherall (1984: 184), who, as we saw above, harshly criticized questionnaire surveys, considers direct observation “the only reliable method of collecting data on dictionary user behaviour”, but he perceives the negative side as well:

Ideally [...] the researcher would actually watch users in action. But this, too, causes problems. Under such conditions it would probably be difficult for the subjects to behave normally as users. Also, it is unlikely that all the information the researcher needs would be retrievable via the visual medium. And finally, such an exercise is so time-consuming that the sample is likely to remain unrepresentatively small.

Once more it is Wiegand (1998) who tackles the topic with the greatest precision (p. 57—583). He distinguishes the following types of observation:

- *open – hidden* (in the second case, the user does not know that he is being observed);
- *mediated – unmediated* (in the first case, some instrument is used, usually a movie camera<sup>9</sup>);
- *actively participative – passively participative* (i.e., Wiegand considers any kind of observation as participative; in addition, the researcher is *active* when he takes part in more ways than as a simple observer);
- *the annotations are structured – unstructured* (in the first case, the researcher annotates his or her observations on forms prepared in advance; in the second case, the annotations are made freely); both types may be called *protocols* (cf. 1.3.4);
- *field observation – laboratory observation* (in the first case, subjects are observed in their natural environment of work or study, for example in a class room during a test in which dictionaries may be used, or in an office where a secretary consults reference works; laboratory observation occurs when subjects are observed during an activity which is organized especially for research purposes).

The combination of some of these characteristics results in a certain type of method of observation.

In contrast to questionnaire surveys and interviews, direct observation shows actual dictionary use. However, in the first place, with this method only “the external aspects of look-ups” can be observed (Wiegand ibid.: 574), i.e. facts like the reasons for look-ups, the level of helpfulness of the look-ups and the satisfaction of the users cannot be verified; secondly, in general, or more precisely in the few studies undertaken with this method to date, the users have not been observed in their natural surroundings. So one might say that

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<sup>9</sup> Subjects were filmed in the following studies on dictionary use: Ard (1982), Tono (1991), Tono (2000), De Ridder (2002), Thumb (2004), and Ronowicz et al. (2005).

such “laboratory observation” (and even “field observation”, if it is not hidden) indeed reveals actual dictionary use, but not necessarily natural or normal use.

In her concluding comments, Nesi (2000: 54) states:

In observation-based research, it is clearly necessary to make a compromise between size of sample, on the one hand, and level of investigation, on the other. Broadly speaking, the greater the number of research questions, the smaller the sample that can be observed. [...] in some studies there are clearly defects in experimental design, which threatens to at least partially invalidate the findings.

### 1.3.4 Protocols

To make a protocol of dictionary use means that someone describes in writing or orally how subjects proceed in their look-ups. In protocols filled in by the subjects themselves, the reasons and other thoughts which occur during consultation may be expressed as well.

The most detailed description and discussion of dictionary use protocols is to be found in Wiegand (1985: 59-70) and in Wiegand (1998: 974-1022).

According to this author, the annotations of someone who observes others' look-ups may be classified as protocols, but traditionally in metalexicography, only the look-up description given by the consultants themselves is considered a protocol (Wiegand 1998: 975 f.)

Several types of such *self-observation protocols* (or simply *protocols*) must be distinguished.

#### a) Written protocols

They are written during consultations or after them. Not only the proper consultation acts can be annotated but even the cases in which subjects thought of consulting a dictionary but then desisted (cf. Wiegand ibid.: 984).

Such protocols may be directive or indirective. Only in the first case, subjects are told what they shall do (e.g. look up certain lexemes in a certain dictionary).

Written protocols may be controlled or uncontrolled. They are controlled if an observer makes his or her own annotations and compares them with the users' protocols to see if these describe the consultation acts faithfully. In uncontrolled protocols – which are the norm – the researcher cannot know whether the subjects' annotations reflect their actual behaviour. The protocols made in Descamps & Vaunaize's (1983) and Diab's (1990) studies were obviously uncontrolled, since subjects were asked to write down the details of their look-ups at home in “notebooks of dictionary use” or in “diaries”. Thus one does not even know if the protocols were made during or after the consultations. The protocols in Hatherall's (1984) investigation were uncontrolled, too, although they were made in the classroom in the presence of the researcher.

Written protocols may be structured, unstructured or semi-structured (Wiegand ibid.: 994). In structured protocols, subjects fill in forms prepared by the researcher; in the unstructured ones, they annotate their observations freely, and in the semi-structured ones, some facts are written down in forms, others are put down freely. Structured protocols –

which of course are analysed more easily – may contain columns in which subjects are asked to annotate facts like: “lexical item looked up”, “dictionary consulted”, dictionary entry consulted”, “precise look-up procedure (reading and interpretation of the entry)”. They may be asked as well how long the whole consultation act lasted.

Protocols may be “embedded” or retrospective. Embedded protocols are made during consultations (i.e. after each partial act, subjects write down what they did) and in part immediately afterwards (i.e. after the last act involved in the consultation).<sup>10</sup> Partial acts are, for example: deciding to look up a certain lexical item; choosing a dictionary; searching the right entry; choosing a part of the entry; and deciding which lexicographical data are relevant.

Retrospective written protocols can be done immediately after the consultation or later. Because of limited recall, the more time elapsed before they are made, the less value they will have.

### b) Oral protocols

Although the term *verbal protocols* is much more frequent, I, like Nesi 2000 and Tarp 2009, prefer to say *oral protocols*, because only in one of its senses does the adjective *verbal* mean “oral”.

Another very frequent term is *Think Aloud Protocol* (TAP).

Wiegand (*ibid.*: 1010 ff.) – who considers this term to be wrong because one cannot think aloud, only express what one thinks – employs *oral comments on (dictionary) use*. These are either like the so-called TAPs (i.e. oral descriptions of consultations *in-actu*, during the consultations) or they are retrospective. However, there does not seem to be any study in which the method of retrospective oral commentaries was utilized.<sup>11</sup>

I will use the terms *oral protocol* or *Think Aloud Protocol* (TAP).

Among metalexicographers it is, in addition to Wiegand, Thumb (2004: 33-40) who provides the most information about this method, especially about its origin, which both authors consider to have been in the first half of the 20<sup>th</sup> century. While Thumb (p. 34) cites only works in English, Wiegand (p. 1011) states that it was developed by the German psychologist Karl Bühler (cf. as well Krings 1986: 90).

Since the protocols have to be taped, transcribed and analysed, it is a very time-consuming method. In metalexicographical studies it has been used by Ard (1982), Krings (1986), Neubach & Cohen (1988), Müllrich (1990), Al-Besbasi (1991), Yokoyama (1994), Jääskeläinen (1996), Atkins & Varantola (1997), Lomicka (1998), Mackintosh (1998), Momoi (1998), Jensen (1999), Wingate (1999, 2002, 2004), Nord (2002), Livbjerg & Mees (2003), Thumb (2004), Ronowicz et al. (2005), and Höfling (2006).

Normally subjects are asked to say everything they think from the moment at which they encounter an unknown lexical item (or when they need some more information about one they already know) until they find the information needed or give up. Protocols of this type are unstructured. But TAPs may be structured, too, i.e. the researcher may give

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<sup>10</sup> Wiegand (1998: 984) prefers the term *embedded* to *simultaneous*, since the annotations cannot be made exactly at the same time as the look-ups.

<sup>11</sup> Fraser's (1999) subjects employed a “retrospective think-aloud protocol” of lexical processing strategies, one of which was the use of dictionaries; but this study did not investigate how dictionaries were consulted.

detailed instructions about what is to be expressed. Wiegand (*ibid.*: 1016) calls such protocols (or “oral comments”) “directives”. While written protocols are mostly structured, oral ones usually are not, as can be perceived in Cohen & Hosenfeld’s (1981: 286) remark, quoted by Krings (1986: 89f.):

In thinking aloud the subject just lets the thoughts flow verbally without trying to control, direct, or observe them (beyond certain instructions which an outside investigator may have given). Thus, think-aloud data are, by their very nature, unanalyzed and without abstraction.

### 1.3.5 Tests and experiments

Ripfel & Wiegand (1988: 495 f.) and Ripfel (1990: 1632) deal with tests and experiments briefly in one paragraph. Zöfgen (1994: 48 ff.) comments on them, as do I, together in the same section. Hulstijn & Atkins (1998) do not mention the term *test*, and employ the term *experiment* only twice. Nesi (2000: 12 ff.), in a subchapter entitled “test-based research”, makes it clear that she does not distinguish the two methods and summarizes reports of several studies in which, in her opinion, they were used. She divides the studies according to their objectives: to investigate the effects of dictionary use in two circumstances (reading, vocabulary learning) and to investigate user skills. Tono (2001: 66 ff.), in his subchapter about methods, does not mention tests. Dealing with experiments, he distinguishes among a number of different types (cf. *infra*). Wiegand (1998), on the other hand, discusses the topic “tests” in more than one hundred pages (p. 677-818), and the topic “experiments” in six pages (p. 819-822, 1,022-1,025).

#### a) Tests

In common speech, the word *test* has several senses. In a scientific or even school context, tests are given to measure or evaluate something. Thus, in studies on dictionary use, tests may be utilized to verify to what degree dictionary consultations – or look-ups in certain dictionaries – influence some kind of linguistic activity (reading, vocabulary learning, etc.). As was said in Section 1.2, I devote a special chapter to investigations about the effects of dictionary use, and in that chapter studies are reviewed which of necessity made use of tests – because without tests the effects cannot be measured.

Although there are criteria to determine the quality of tests (cf. Wiegand, *ibid.*: 760 ff.), one may employ the term *test* whenever, in an investigation, subjects must execute some task, the results of which are to be evaluated. Experiments, on the other hand, must fulfil certain conditions to merit that designation. Every experiment includes tests, but not every test is an experiment. For example, one may verify, or test, how much of a text two students understand, only one of them using a dictionary; but this would not be an experiment.

One problem for tests, and consequently for experiments, is evaluation. Among the criteria of quality discussed by Wiegand (*ibid.*), there is “objectivity”, which the German author subdivides into “objectivity of the execution [of the test]”, “objectivity of measurement [of the results]” and “objectivity of interpretation”. The last two criteria may be joined under the heading “evaluation”: the second refers to the way in which the

execution of the task is measured, while the third one refers to the fact that the evaluation should be made by more than one person (for example, in the case of a composition or translation) – unless there is little margin for doubtful interpretations, as in the case of multiple-choice tests (although even this test type does not entirely exclude the possibility of disagreement about the correctness of answers).

As a matter of fact, one of the preferred ways of measuring performance is precisely the multiple-choice test. However, Nesi (2000: 32) states, rightly enough, that this test type, when used to evaluate, for example, vocabulary learning, “may affect the validity of results by providing a further context for each word, and therefore facilitating contextual guessing as an alternative to dictionary use”. In other studies, the researcher, having chosen as a task for verification of the effects of dictionary use (not of the students’ translation competence) the translation of a text or of isolated sentences, is, quite apart from the difficulty of objective evaluation, forced to confront the disturbing fact that the results may be influenced by the subjects’ translation competence, whereas the aim was to measure the influence of dictionary use.

### **b) Experiments**

Without defining or explaining what an experiment is, Zöfgen (1994: 50) states that “experimental studies [...] are seen by most psychologists as the ‘royal road’ of empirical research”. Apparently referring to experiments, Hulstijn & Atkins (1998: 11 f.) assert:

For any piece of research to be valid, the operation studied must be analysed in enough detail, and systematically enough, for the various factors which affect its outcome to be isolated and identified; the investigation must then be structured in such a way as to ensure that the single factor to be studied is as far as possible the only variable in the experiment.

Wiegand (*ibid.*: 820 f.) provides a definition of experiments in dictionary use and asserts that among the studies published by 1998, only Tono’s (1984) was an experiment. Tono (2001: 71) himself, however, regards the investigations carried out by Summers (1988), Hulstijn (1993), Hulstijn, Hollander & Greidanus (1996) and Knight (1994) as true experiments.

Tono is the only metalexicographer to differentiate among the various degrees of experiments. Based on Cohen & Manion (1994), he distinguishes the following “designs” (p. 70 ff.):

#### **1) Pre-experimental design**

In this type of study, also called the “one group pretest-post-test”, a test is given to a group of subjects to measure some variable (for example, the number of errors in a composition); then some new factor is introduced (e.g. instructions on dictionary use) and a second test is given to see if that factor influenced the performance. Although in such a study external factors are not controlled – which may invalidate the results – it is broadly utilized.

#### **2) Quasi-experimental design**

The investigation is carried out with two groups. Subjects are not selected randomly; for example, two classes of students may be chosen. In both groups, two tests are given. In the “experimental group”, a new factor is introduced between the tests, but not in the “control group”. In this way, the researcher verifies if that factor has some influence.

### 3) True experimental design

The only difference between this one and the quasi-experimental design is that the two groups “have been constituted by randomisation”. Tono (p. 71) argues that “In theory, random assignment [...] controls all possible independent variables. In practice, of course, it is only when enough subjects are included in the experiment that the principle of randomisation has a chance to operate as a powerful control.”

In her concluding comments on test-based research (in which she does not distinguish between tests and experiments), Nesi (2000: 32) makes the following critical remarks, among others:

[...] the validity of test findings very much depends on correct test administration, and appropriate test design. Problems with both of these are evident in many test-based studies. In several tests of dictionary use, dictionaries were allocated in a rather haphazard fashion. In some cases the dictionary-using group was self-selecting, and therefore different in kind from the control group, and in some cases the researchers failed to take into account the type of dictionary used, and the subjects’ familiarity, or lack of familiarity, with the dictionary.

### 1.3.6 Log files

Tests and experiments aim at investigating the *effects* of dictionary use. With the methods described in 1.3.3 and 1.3.4 (observation and protocols), one can study only *actual* dictionary use (i.e. *how* dictionaries are consulted or, in protocols, also *why* look-ups are made and what subjects think about the consultations). In the case of electronic dictionaries there is yet another method to research how users proceed, namely the utilization of log files.<sup>12</sup>

Bergenholtz & Johnsen (2005: 117) explain:

Analyses of log files reveal exactly which lemmas and which types of information have been requested, and, perhaps more significantly, which lemmas and which type of information have been requested but were not found in the dictionary. Furthermore log files allow lexicographers to see the types of information which have not, or not yet, been searched for. All in all, log files may thus be used as a tool for improving internet dictionaries – and perhaps also printed dictionaries – quite considerably.

According to Tarp (2009: 14 f.):

There are basically two types of log files. The first one is the registration of all movements on the user’s computer, i.e. activation of the keyboard and use of the mouse. The second basic type

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<sup>12</sup> In the Portuguese original of the present book, I did not deal with log files (as Tarp 2008 in his review rightly states), but I once mentioned the term, while in the summaries of studies in which log files were used, I generally employed the expression “registered electronically”.

is the registration of all transactions between the user's computer and the database where the dictionary is located. [...] In a lexicographical perspective, only research of the second type is known, but this does in no way imply that the first method is irrelevant to lexicography.

The great advantage of this kind of "observation" is that it is not intrusive, i.e. the user does not know that he is being "observed" (in the sense that his look-up actions will be analysed); there is no interference, and consequently the consultation is more natural than in the case of other methods. According to Tarp (*ibid.*), log files provide "easy access to a big amount of data representing the whole population of actual users, from which reliable information of the consultation can be retrieved using the proper methods", and "the processing of the collected data is relatively easy in terms of quantitative research".

Bergenholtz & Johnsen (2007) argue that log files should be prepared in a functionalistic approach: "Compared to the present guessing competitions and to lemma-oriented log file analyses, analyses of function-oriented log files are much closer to the truth, especially if those searches where the user has moved from one function to another are filtered out" (p. 17).

To my knowledge, the following researchers have employed log files:

Krantz (1991), Hulstijn (1993), Knight (1994), Nesi & Meara (1994), Lomitzka (1998), Laufer (2000), Laufer & Hill (2000), Liou (2000), Ling et al. (2001), De Ridder (2002), Ling et al. (2002), Selva & Verlinde (2002), Bergenholtz & Johnson (2005), De Schryver et al. (2006), Laufer & Levitzky-Aviad (2006), and Bergenholtz & Johnsen (2007).

### 1.3.7 The "dictionary use scenario"

Tono (2001: 56) lists five "situational factors affecting dictionary use": a) L2 proficiency levels; b) L1 background; c) individual differences (age, cognitive style, learning strategies, etc.); d) contexts of use; and e) types of dictionaries.

Hulstijn & Atkins (1998: 12 f.) had gone into more detail, enumerating fourteen variables which form the "dictionary use scenario":

1. The user's "sophistication" (general educational level, reading, writing and inferencing skills).
2. The user's proficiency in the foreign language.
3. The user's understanding of dictionary metalanguage.
4. If actual dictionaries are involved, the user's familiarity with the dictionary or dictionaries being used in the task.
5. The user's knowledge of the subject matter of the text being understood, translated, read, written about etc. for the purposes of the investigation.
6. The format and type of the specific task (written or spoken; translating or comprehending, etc.), including any time limits imposed.
7. The level of difficulty of the task for the subjects carrying it out.
8. The language (L1 or L2) in which the information is sought or provided.
9. The type of linguistic unit involved (e.g. content or function word), the linguistic information (semantic, grammatical, orthographic, encyclopaedic etc.) sought about that unit, and the linguistic and cultural distance between L1 and L2. (Linguistic and cultural distance tends to be reflected in the proportion of lexical items more or less easily "translatable" between the languages involved.)
10. The medium in which the dictionary information is presented (print or electronic).
11. The type of dictionary or dictionary entry used (monolingual, bilingual, "hybrid", etc.).

12. The way in which the dictionary information is presented in the dictionary or dictionaries used: classification, layout, metalanguage, abbreviations, typeface conventions etc.
13. The source of dictionary information available to individuals participating in the investigation: actual dictionaries or “cited” dictionaries; moreover, the latter may either be extracted from a published dictionary or composed for the purpose of the test.
14. The adequacy of coverage of a dictionary vis-a-vis the actual tasks involved (whether or not the information sought actually is to be found in the dictionary or dictionaries used).

These factors or variables should be taken into account in studies investigating the *effects* of dictionary use. Hulstijn & Atkins (*ibid.*: 11) (already cited in 1.3.5.b) recommend that the investigation be “structured in such a way as to ensure that the single factor to be studied is as far as possible the only variable in the experiment”. This is not the case in reports on other types of studies, but even then (for example in questionnaires or in research on actual dictionary use), the “scenario” should be described in detail, and, as was said above, results should not be extrapolated to other scenarios.

## 1.4 Reference needs and skills

### 1.4.1 Reference needs

Instead of *reference needs* one may use the term (*dictionary*) *user needs*. Both refer to the fact that in certain circumstances dictionaries are needed and should meet the needs of the users.

Cowie (1983: 139-142) dealt with that topic, and Béjoint (1994 [2000: 140-154]), Zöfgen (1994: 52-55), Tono (2001: 37-50) and Thumb (2004: 4-8) each devoted a chapter or subchapter of their books to it, quoting several investigations into reference needs. Wiegand (1998) did not use the term *needs*, but, when describing a large number of types of look-ups, he too discussed the subject, in the second part of his book.

Béjoint (*ibid.*: 141) explains:

The study of the reference needs of the users of general-purpose dictionaries aims at providing answers to such questions as: In what sort of situation do the users feel the need to consult their dictionaries? When do the users use a dictionary rather than other potential sources of information? Why? What sort of lexical item, and what sort of information on these items do the users consult most? Which do they consult least? Are there items or kinds of information that they never use? What are they? Are there language needs that are not satisfied by the general-purpose dictionary? What are they? In a word, the question is, what do people use general-purpose dictionaries for?<sup>13</sup>

Zöfgen (*ibid.*: 52) prefers to distinguish only a) tasks, or “situations of use” in which dictionaries are consulted, from b) the information searched for. Situations of use were mentioned above in 1.1 and 1.3.7; as to the information which users look for, the studies summarized in the next chapters will give some answers.

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<sup>13</sup> Béjoint restricts himself to “general-purpose dictionaries”, but his questions apply to other dictionary types as well.

In a recent article, Tarp (2009: 6) differentiates among several types of human needs, introducing the following oppositions: natural vs. historical-cultural needs; recognised vs. non-recognised needs; objective vs. subjective needs; and genuine vs. artificial needs. Of course, lexicographical needs “belong to the historical-cultural” ones, and, therefore, “research into lexicographical needs must take into account that these needs are [...] continuously changing and developing”. Regarding the second opposition, Tarp argues:

[...] a person may, in an extra-lexicographical situation, have a lexicographically relevant need which he or she does not recognise and therefore does not try to solve consulting a dictionary, although dictionaries designed for this specific type of need may already exist. There may also be other lexicographically relevant needs which lexicographic theory has still not recognised [...]. It could therefore be relevant to lexicographical user research to try to discover and describe both the recognised and the non-recognised needs. Analogously, there could be cases where a potential user actually recognises a need, but does not take lexicographical action because he or she does not think that it can be satisfied by means of dictionary consultation.

The author concludes “that it is not enough to do research in the actual usage situation when the purpose is to reveal the lexicographically relevant user needs”.

As to the third opposition, Tarp defines *objective needs* as “the actual, genuine needs”, while the subjective needs represent “the reflection of these needs in the consciousness”. He thinks that “the users may frequently only have a vague or approximate idea of the objective needs; they may know that they need something, but not exactly what it is. In such cases, it makes no sense to ask them about their real needs because the answers will be inaccurate and unreliable.”<sup>14</sup>

Finally, Tarp introduces one more distinction: a) “*function-related needs* which are the objective needs occurring in an extra-lexicographical situation” vs. b) “*secondary, usage-related needs* which only occur during the consultation process when the users need help to find and interpret the relevant lexicographical data”. The first type is the need for lexical information someone has in some circumstance of use (e.g. in a translation), whereas the second refers to the reference skills he or she needs – or, if he or she does not possess those skills, to the help needed – for the look-up to be successful.

### 1.4.2 Reference skills

With regard to learner’s dictionaries, Cowie (1983: 143) mentions, as one of the factors that “have an important bearing” on the design of such dictionaries, “the learner’s known or anticipated reference skills”. Of course, not only learners, but all types of users, need such skills. Wiegand (1985: 44) distinguishes the “potential” user (who meets the requirements for becoming a user) from the “well-informed” user (the “*kundiger Benutzer*”, who is able to use a certain dictionary, from the “learned” user (“*geschulter Benutzer*”),

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<sup>14</sup> Objective needs being *genuine* needs, Tarp mentions, in the fourth opposition, *artificial* needs, which may be created especially by publicity. Publishing houses may conduct user studies which “will typically try to reveal the subjective needs which the potential users (and buyers) themselves think they have, because this information may be helpful to expand the market capacity of future dictionaries”. Such research must, of course, be distinguished from investigations which aim to “generate new scientific knowledge” and therefore must try to discover “the genuine, objective needs”.

who has some notions of lexicography and therefore knows in which dictionary type the information can be found).

The topic *reference skills* is discussed, and studies on it are quoted, e.g. by Béjoint (1994 [2000: 154-168]), Tono (2001: 50-54), and Thumb (2004: 8-18). As in the case of *reference needs*, these authors join in the same (sub)chapter of their books studies carried out with different methods. I prefer to divide the chapters of this book in another way, as was shown in 1.2, namely according to the methods employed. Thus, investigations into reference needs or skills will not be summarized in a specific chapter, but appear in various chapters.

Writing about the difficulties of dictionary use and, consequently, about the necessary skills, Miller & Gildea (1984: 14) show what happens, for example, when reading is interrupted for the sake of consultation:

The continuity of your thought is broken, but the context in which the unfamiliar word occurred must be kept in mind while you search: first you search for the dictionary itself, then you search through the dictionary alphabetically for the word you want. Then, once you have found your word, you may still have to make several decisions: first, you may have to choose among two or three different entries on the basis of the part of speech; next, within the chosen entry, you may have to decide among several alternative senses. And, finally, the context of your original passage must be compared with the succession of contexts in the dictionary until a best guess can be made about the intended sense. Context-matching is a high-level cognitive skill.<sup>15</sup>

Scholfield (1982: 186-193) had already listed a certain number of actions or decisions necessary for a consultation to be successful, in the case of text reception. This list was repeated in Scholfield (1999: 19 ff.) and cited by Coura Sobrinho (2000: 76 f.) and Tono (2001: 90).

Since there is not only text reception, Béjoint (1994 [2000: 155s.]) enumerated necessary or potential operations which may occur when a dictionary is consulted in several circumstances of use. Humblé (1997 [2001: 100 ff.]) described typical look-ups in decoding and encoding, and the problems faced by the users, and Nesi (1999) presented a list of reference skills “that might be taught at university level”. Her article is available on the internet, but since there is no guarantee that it always will be, I present the first four of the six stages she imagined (the fifth and the sixth being “Recording entry information” and “Understanding lexicographical issues”):

#### **Stage one: Before study**

1. Knowing what types of dictionary exist, and choosing which dictionary/ies to consult and/or buy
2. Knowing what kinds of information are found in dictionaries and other types of reference works

#### **Stage two: Before dictionary consultation**

3. Deciding whether dictionary consultation is necessary
4. Deciding what to look up
5. Deciding on the appropriate form of the look-up item
6. Deciding which dictionary is most likely to satisfy the purpose of the consultation
7. Contextual guessing of the meaning of the look-up item

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<sup>15</sup> This passage is quoted by Béjoint (1994 [2000: 155]), but his reference is different from mine, because he quoted from the manuscript of the article.

8. Identifying the word class of the look-up item

**Stage three: Locating entry information**

9. Understanding the structure of the dictionary
10. Understanding alphabetization and letter distribution
11. Understanding grapho-phonemic correspondence (and the lack of it)
12. Understanding the use of wildcards in electronic dictionary searches
13. Choosing amongst homonyms
14. Finding derived forms
15. Finding multi-word units
16. Understanding the cross-referencing system in print dictionaries, and hyperlinking in electronic dictionaries

**Stage four: Interpreting entry information**

17. Distinguishing the component parts of the entry
18. Distinguishing relevant from irrelevant information
19. Finding information about the spelling of words
20. Understanding typographical conventions and the use of symbols, numbered superscripts, punctuation
21. Interpreting IPA and pronunciation information
22. Interpreting etymological information
23. Interpreting morphological and syntactic information
24. Interpreting the definition or translation
25. Interpreting information about collocations
26. Interpreting information about idiomatic and figurative use
27. Deriving information from examples
28. Interpreting restrictive labels
29. Referring to additional dictionary information (in front matter, appendices, hypertext links).
30. Verifying and applying look-up information

Nesi mentioned the necessity to teach dictionary use. This issue will be dealt with in chapter 7.

## 1.5 Criticism

In his review of the original version of the present book, i.e. of *O Uso de Dicionários: Panorama geral das pesquisas empíricas*, Tarp (2008) regrets that I did not “express more critical opinions on specific studies, especially when it comes to methods used”. I agree with him, but not only would this have demanded much more time but also made the book too long. It would have made the book very repetitive, too, since the same or very similar criticisms can be made of many of the studies. Therefore, in this English version, I maintain the same policy, making critical remarks in only a few cases.

Several authors have summarized, in greater or lesser detail, a number of reports on dictionary use research and commented on them. Restricting myself to the new millennium, there are, for example, Bogaards’ reviews of Wingate (2002) and Thumb (2004). Bogaards (2003: 201) remarks that the “conventional methods of assessing reading comprehension would have benefited from more discussion; they cannot be characterised as simply ‘not adequate’ without further motivation”. Regarding Thumb (2004), Bogaards (2005: 273 f.)

states, among other criticisms, that the methodology poses some problems (e.g. “selecting students because of their good performance on a particular part of the experiment could interfere with the results of the experiment”), so that “the conclusions drawn by the author should be treated with some caution”.

Nesi (2000) summarizes and comments on more than twenty studies. Her critical remarks on surveys may be ignored here, since the general problems of surveys were hinted at in Section 1.3.1. In her subchapter on “observation-based” investigations, she provides summaries of Ard (1982), MacFarquhar & Richards (1983), Hatherall (1984), Miller & Gildea (1984), Miller & Gildea (1987), Neubach & Cohen (1988), Bogaards (1990), Mülich (1990), Cumming, Crop & Sussex (1994), and Harvey and Yuill (1997). In her subchapter on “test-based” research, she summarizes Bensoussan, Sim & Weiss (1984), Black (1986), Tono (1988), Tono (1989), Bogaards (1991), Luppescu & Day (1993), Knight (1994), and Atkins & Varantola (1998). To give an idea of the kind of criticisms that may be found, let me just quote a few passages of her book.

**About Ard (1982):**

Ard’s paper is part reflection on current teaching styles and attitudes, part experimental report. However, the experiments play a largely supporting role; they are not reported in full, and we are not given sufficient details of his method to permit accurate replication (p. 35).

**About the results of Bensoussan, Sim & Weiss (1984):**

Time constraints may have played a part, and the students may have been able to work out meaning from context in some cases [...]. The results [...] were probably also influenced by two other variables: the dictionary used, and the ability of the students to use them (p. 16).

**About Black (1986):**

One problem with the experiment is that subjects were required to look up words that they did not necessarily need to look up, and were later tested on all words, regardless of whether the defining information had played a part in comprehension. [...] Target words were chosen at the pilot stage on the grounds that they were unknown and irretrievable from context. The mismatch between the subjects’ anticipated lexical knowledge and their actual lexical knowledge in the experiments might have been due to faulty piloting [.... (p. 19)].

**About Neubach & Cohen (1988):**

Neubach and Cohen’s sample size was small, the tasks posed problems that the researchers did not appear to have foreseen, and the resultant data was not presented systematically. [...] their findings tend to be summaries of comments made in individual protocols and interviews, and there is no indication of the proportion of subjects who completed each search successfully. [...] A [...] problem with summarised protocols is that summaries may reflect the authors’ own interpretation of events (p. 38 f.).

**About Tono (1989):**

Tono does not mention any control over whether subjects actually used their dictionaries [...]. [...] Tono does not give examples of his reading comprehension test questions, neither does he discuss whether the questions hinged on understanding individual words. He also does not appear to have monitored the words his subjects looked up, or their coverage in the two English-Japanese dictionaries. For this reason we lack the information we need to fully account for Tono’s findings (p. 17).

**About Luppescu & Day (1993):**

The test was supposedly designed to test knowledge of words that were previously unknown to the subjects, that appeared in the reading passage, and were looked up by subjects in the experimental group. However Luppescu and Day do not establish whether these words were really previously unknown, neither do we know whether they were looked up. An equally important criticism of the experimental design is that the test itself was written in such a way that subjects with full understanding of the target words could still give incorrect answers (p. 24).

Tono (2001) briefly summarizes more than forty studies, which he had ordered on the one hand (in chapter 2) according to certain circumstances of use (vocabulary learning, decoding, encoding) and, on the other (in chapter 3) according to their intended needs or skills analysis. He makes almost no individual criticism, but in the summary of chapter 2 he remarks:

Since in such studies the reference skills of the subjects are largely disregarded as a variable and the operational definition of dictionary is quite unclear, it is often difficult to interpret the results. [...] in many such studies, there is the tendency for the situation of dictionary use to become too artificial to have any practical value (p. 36).

In one part of his book, Lew (2004) provides an excellent survey on dictionary use research and points to one aspect not frequently mentioned, *viz.* statistical testing:

The body of quantitative studies in dictionary research is not particularly impressive, and experimental studies are still rare (Dolezal and McCreary 1999; Hulstijn and Atkins 1998; Tono 2001). It is all the more regrettable that many of those studies that did produce quantifiable results amenable to statistical methods failed to take advantage of the opportunities that inferential statistics offers. In far too many studies, impressionistic claims about theoretically important differences were made on the basis of sample or group means alone. In some cases, other researchers can still use the original data to compute interesting statistics, as did Tono (2001: 48) on Battenburg's (1991) data. Routinely, though, there will not be enough of the original data available to make such a reanalysis possible. It is regrettable when some of the effort that has gone into data collection, often a laborious process, appears to have been partially wasted, and the data have not been utilized to a fuller extent.

The harshest general criticism was made by Tarp (2009: 19):

[...] it seems that almost no qualitative progress has been made. Of course there are positive aspects, but it is not difficult to reach the conclusion that the majority of the previous user research is a tragic waste of time and resources. This holds especially true for the quantitative research projects.

Then the author suggested:

Future user research should learn from this experience. It must formulate clear objectives; incorporate the scientific methods used by modern social science, and carry out meticulous planning. In this respect, the advantage of combining various methods within the framework of one and the same research project should be considered, as well as the degree to which quantitative research methods are relevant at all to lexicography. Finally, the research should be based upon an advanced theory of lexicography capable of establishing scientific categories in terms of user needs, user typology, user situations, usage situations, access routes, etc. [...].

## 2. Surveys

In this chapter, I summarize reports of questionnaire surveys. In some of these studies, interviews were conducted as well.

In chapters 3 and 4, investigations of the use of specific dictionaries or of specific types of dictionaries, and studies of specific topics or of the use of electronic dictionaries, are excluded (since chapters 5 and 6 are devoted to them), but not here. That is, in this chapter all kinds of user surveys are summarized.

The problems of surveys were dealt with in Section 1.3.1.

As was said in the preface, I did not read all reports, so that in some cases my summaries are based on other authors. When several authors wrote about the same study, I joined together their information, without necessarily distinguishing what had been said by each of them.

Only in this chapter do I distinguish between investigations of native speaker use of monolingual dictionaries and research into the use of monolingual or bilingual dictionaries by non-native speakers; furthermore, I decided to put surveys of dictionary use in general (cf. Tomaszczyk 1979) in the second group.<sup>16</sup>

### 2.1 Surveys of native speakers' use of monolingual dictionaries (L1Ds)

#### Barnhart (1962)

This text about L1Ds and the decisions editors have to take was presented in 1960, during the first conference on lexicography, organized in Bloomington, Indiana (USA); it was published in 1962. Only in one small passage does Barnhart refer to his survey. Since this was the first empirical study of dictionary use (or, at least, the first survey), it is mentioned by many authors, e.g. Hartmann (1987: 12 f.), Ripfel & Wiegand (1988: 513), Béjoint (1994 [2000:142]), Nesi (2000: 4 f.), and Thumb (2004: 4).

Here is the short passage in question:

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<sup>16</sup> Please see the different types of dictionaries in the list of abbreviations.

In 1955 I circulated 108 questionnaires in 99 colleges in 27 states (5 eastern, 8 southern, and 14 western) reporting on the use of the dictionary by some 56,000 students. The teachers were asked to rate six types of information commonly given in college dictionaries according to their importance to the college freshman. Their replies indicate that the college freshman uses his dictionary most frequently for meaning and almost as frequently for spelling. Pronunciation is third with synonym studies and lists, usage notes, and etymologies far behind. (p. 162 f.)

Nesi (2000: 4) criticized the survey with the following words:

Barnhart's survey did not address the users themselves, but rather their teachers. We are given no indication as to how the teachers obtained information about the users' habits, we do not know, for example, whether their replies were an account of what they had directly observed, or whether they were drawn from personal memories of college dictionary use, or based on preconceived notions of the way dictionaries are used.

### **Gates (1972)<sup>17</sup>**

[Hartmann (1989: 107)]

The only information Hartmann provides about this study is that it was a “specialised investigation of the dictionary needs of American biblical scholars” and that it “demonstrat[ed] the usefulness of the questionnaire method”.

### **Quirk (1973)**

This survey has been cited by many authors (e.g. Hartmann 1987:13 f., Ripfel & Wiegand 1988: 498, Béjoint 1994 [2000: 142 f.], Nesi 2000: 5, Tono 2001: 41 f., Thumb 2004: 4). It was, according to Hartmann, “the first scholarly attempt in Britain to assess the dictionary user's attitudes, expectations and prejudices, if not his or her actual needs and reference skills”.

Differently from Barnhart, Quirk took as his informants were users themselves, *viz.* 220 “native English-speaking British [...] undergraduate students at University College London, half-way through the first year of their studies” (p. 313 f.)<sup>18</sup>; half of them were students in the “humanities” and half in the “sciences”, and they were “roughly half men and half women”.

His questionnaire consisted of 30 items. In order to give an idea of the type of questions asked, I quote some of them, as numbered by the author (p. 314):

3. Average frequency of use
6. Subject's ownership of a dictionary
11. Subject's reason for most recent use of a dictionary
13. Subject's failure to find what he wanted
15. Should citations be from named (and well-established) authors?
16. Comprehensibility of definitions

<sup>17</sup> Bibliographical data according to Hartmann: Gates, John Edward. 1972. An Analysis of the Lexicographical Resources Used by Biblical Scholars. Missoula, Montana (Society of Biblical Literature. Dissertation Series 8).

<sup>18</sup> I quote from the text republished in: Hartmann, R. R. K. (ed.). 2003. *Lexicography. Critical Concepts*. Vol. 3: Lexicography, metalexicography and reference science. London / New York: Routledge, 312-325.

18. Use of a dictionary for pronunciation
22. Should dictionaries have encyclopedic entries?
24. Should dictionaries contain American English words?
25. Should dictionaries contain slang words?
27. Adequacy of a dictionary for finding synonyms and antonyms

In the results section, Quirk mostly makes a distinction between the “humanities” and “sciences”, and sometimes between “weekly users” and “not weekly users”. In a note, he explains: “Chi-square tests were done on all numerical data, and where these revealed significance at least as strong as the 5 per cent level ( $p < 0.5$ ), the probability is shown as a fraction of unity.” In fact, in most items  $p$  is indicated; quite often it is  $p < .001$ .

Based on the numbers indicated by Quirk, Béjoint (1994 [2000: 142 f.]) calculated the percentages of some items. In three cases, I found different percentages, which I present in square brackets:<sup>19</sup>

- Information most sought, or major reasons for look-ups: meaning – 67%; spelling – 26%; needing help for word games – 7%; others – 13% [29%]. In the subjects’ families, the sequence of importance was, according to the subjects’ impressions, the same, but the percentages were different: meaning – 37%; spelling – 26% [17%]; needing help for word games – 17% [26%]; others – 18%.
- The definitions were considered too difficult by 74%; on the other hand, almost 80% stated that sometimes they found definitions that informed less than they already knew about the looked up words.

I cannot go into all the details, but here are some more results (not mentioned by Béjoint): According to Quirk’s comments, subjects showed little interest in etymology, and even less in pronunciation and information on parts of speech.<sup>20</sup> A majority (60%) thought it unnecessary to attest meaning and usage by quotations “from named or established authors”. As to suggestions for improvements, they concentrated on definitions (which should be clearer), coverage (the dictionary should be comprehensive and include modern and colloquial lexical items), and layout (better typography, “less cramped arrangement”, better symbols).

The weak points in surveys having been mentioned earlier, I will just quote some of Nesi’s (2000: 5) critical remarks about this study:

[I]t is unlikely that subjects were able to give correct information for many of the questions. [...] Some questions put subjects’ memories to the test. They would probably have had difficulties recalling, for example, when and why they last used a dictionary. [...] The language and the frame of reference of Quirk’s questions were also very different from those of a first year undergraduate.

### **Hoffmann (1978)**

[Hartmann (1989: 107)]

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<sup>19</sup> Since I read only the text republished by Hartmann, it is possible that there are divergences between the original article and the text published in 2003.

<sup>20</sup> In the text I read (i.e. the text republished in 2003), there is a divergence as to etymology. Quirk says there were “121 subjects reporting that they never sought such data”, but the detailed numbers are: 30 (humanities) and 72 (science), which would add up to less than half of the 220 subjects reported.

According to Hartmann, “Hoffmann (1978) combined a personal critique of the etymological information contained in a general and a specialised dictionary with a survey of the views of 28 university teachers and students”. The reference works were German dictionaries and supposedly the informants were Germans.

### **Kühn & Püschen (1982)**

[Hartmann (1987: 22 f.); Snell-Hornby (1987: 168); Ripfel & Wiegand (1988: 500); Dolezal & McCreary (1999: 70)]

According to Ripfel & Wiegand, the authors undertook a survey of the use of L1Ds by teachers of German in Germany. One of the results was that only one third of the informants owned a general L1D and only one third of these used it frequently. As the article’s title says, the teachers considered sufficient the most popular German dictionary, which is an orthographic one. Ripfel & Wiegand remark that in this dictionary even semantic and grammatical information were sought.

Hartmann informs that there were about 50 subjects and that the questionnaire consisted of 21 items. Among the results, he mentions the fact that “some specialised dictionaries are at least as much used as general-language dictionaries (67% consult dictionaries of synonyms at least occasionally)”.

### **Chansou (1983)**

[Ripfel & Wiegand (1988: 504 f.)]

Chansou’s informants were 55 French teachers in elementary schools. They were asked which dictionaries and encyclopedias were available and which were most used. Then they should [were asked to] choose, from several lists of lexical items copied from L1Ds, those words which they thought should be included in a dictionary for fourth and fifth graders. Results:

- The L1D most used was *Larousse de débutants*, and approximately 77% of the dictionaries were of the same kind, i.e. not especially designed for children. The teachers accepted most lemmas from *Petit Robert* (an L1D) and opined that the macrostructure (word-list) of children’s dictionaries is too small. They were in favour of the inclusion of popularised technical terms and of scientific terms, as well as of items of oral speech (but only if high-levelled). They were against the inclusion of colloquialisms, and tended to exclude old-fashioned and literary vocabulary.

Ripfel & Wiegand comment that the teachers, preferring a large macrostructure, apparently overestimate their students’ proficiency.

### **Descamps & Vaunaize (1983)**

These two researchers wanted to obtain information on the use of French L1Ds in France. They gave or sent 380 questionnaires and “notebooks of use” to friends, associations and teachers, asking the associations and teachers to distribute the material among the association members and students’ parents, respectively. 107 questionnaires and 59 notebooks were returned, but only 105 questionnaires could be analysed, and the

notebooks (whose results are presented in chapter 3) were only more or less complete. One hundred of the 105 informants were French.

Descamps & Vaunaize distinguished among four groups: A) teachers; B) medium or high level professionals; C) people with few qualifications; and D) women without a profession. As can be seen, the authors were not interested in students' dictionary use. The dictionaries were classified in four groups, as well: type I – one-volume dictionaries or encyclopedias; type II: dictionaries or encyclopedias in more than one volume; type III: specialised dictionaries (analogical, etymological, orthographic etc.); type IV: technical dictionaries (of medicine, psychology, zoology, etc.).

Although they did perform statistical analyses, they do not always present percentages. Some percentages were calculated by me. I will not mention the cases in which no answer was given, and I will show only the most interesting results.

- Place of consultation: at home – 77%; at work – 16%; “nowhere” – 5%.
- Number of dictionaries which the informants own, on the average: A – 4.87; B – 3.11; C – 2.65; D – 2.43.
- Types of dictionaries owned by the members of the four groups:
  - A: I – 44%; II – 34%; III – 17%; IV – 5%.
  - B: I – 59%; II – 18%; III – 18%; IV – 5%.
  - C: I – 80%; II – 15%; III – 3%; IV – 2%.
  - D: I – 79%; II – 16%; III – 0%; IV – 5%.
- Information desired or motive for consultation:<sup>21</sup> spelling – 96; meaning – 88; verification whether the word exists – 79; “literary precision” (which probably means that the user searched for a word appropriate in a literary text) – 61; scientific precision – 48; grammar – 43; pleasure or culture – 37; others – 10.
- Reading of the preface: never – 33%; sometimes – 33%; frequently – 33%.
- Way of looking up: reading of the whole entry – 50%; reading of the passage of interest – 30%; others – 20%.
- Confidence in the dictionary: always confident – 67%; have confidence in spelling – 20%; limited confidence – 13%.<sup>22</sup> Descamps & Vaunaize state that group C has more confidence than groups A and B, and that the teachers are the least confident.
- General satisfaction: almost always or usually satisfied with the dictionary – 67%. In group B, 25% were little satisfied; in the other groups, not more than 10% were unsatisfied.
- Motives for dissatisfaction: for more than 40%, the inexistence of the desired word in the dictionary, the circularity of definitions, and the insufficiency of definitions; for less than 20%, the erudite language of definitions, the lack of examples, and the difficulty in finding a word to express an idea.

The authors question whether the informants really understood the alternative responses, and they quote some comments.

Please see the results of the 59 protocols (“notebooks”) in chapter 3.

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<sup>21</sup> The numbers shown by the authors seem to be absolute, not percentages. But since there were 105 informants (i.e. little more than 100), the percentages would be very similar. Subjects could mark several of the categories suggested in the questionnaire.

<sup>22</sup> The authors say “two thirds”, “one fifth” and “the remaining tenth”. However, these fractions do not result in “1”, or “100%”. I transformed the figures into round percentages, changing “the remaining tenth” into “13%”.

### Greenbaum, Meyer & Taylor (1983)

Wanting to investigate “the image of the dictionary” among American college students and “determine in what respects it differed from the image in the minds of British students”, the authors submitted a questionnaire very similar to Quirk’s (1973) to “240 undergraduates, 143 male and 96 female (the sex of one student was not recorded); 83 of them were freshmen and sophomores, and 157 were juniors and seniors. [...] 86 were in the humanities, 76 were in the sciences, and the remaining 78 were studying a variety of subjects” (p. 31).

After showing the results in absolute numbers, Greenbaum, Meyer & Taylor indicate (p. 46 ff.) in percentages the differences between their American and Quirk’s British (UK) informants. Here are the most important data (in per cent):

	US	UK
Informants own a dictionary	97	87
There is a dictionary in the parental home	98	97
Playing word-games may be a reason for dictionary use at home <sup>23</sup>	7	26
Informants use the dictionary weekly	68	34
They consult it mainly for:		
meaning	58	68
spelling	50	26
They frequently look for:		
synonyms and antonyms	14	72
etymological information	8	42
information about pronunciation	18	31
They would like to find in the dictionary:		
well-known words	87	76
regional dialect words	72	29
British words / American words	65	53
common phrases and idioms	51	67
encyclopedic information	63	44
citations	61	61
Occasional difficulty in understanding the definition	59	74
They understand the pronunciation symbols	88	52
Suggestions:		
improve coverage	54	38
improve definitions	27	52
improve layout	4	36

Greenbaum, Meyer & Taylor conclude that the contrast between the two surveys “confirms the belief that the dictionary has a higher status, at least among college students, in the US than in the UK. Not only is the dictionary consulted more often in the US, but also less fault is found with it” (p. 48).

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<sup>23</sup> The number indicated by the authors concerning the UK (82) is wrong, since in Quirk (1973) it is “57”, which I transformed into a percentage.

### **Wiegand (1984)**

In the second part of his article, the author discusses the concept of *lexicographical definition*. Taking as example the word *lemon*, he says that “the lexicographical paraphrase must contain those predicates which are most useful for the identification of the class of objects in an answer to the question: ‘What is a lemon?’”.

In order to show how one might get to know which are these predicates, he submitted a list of 21 predicates, taken from German dictionaries and encyclopedias, to 100 university students in Germany. Those which were chosen by 75% of the subjects were considered “good” and, therefore, suggested as components of a definition, or lexicographical paraphrase.

### **Kipfer (1985, 1987)**

Kipfer (1985) is a master’s dissertation I did not read. My summary is based on Kipfer (1987), an article, with the same title, in which the author presents the study reported in her dissertation.<sup>24</sup>

The informants were 292 “intermediate-level students, in particular tenth, eleventh, and twelfth grade American high-school pupils”. The author wanted to investigate “the acquisition of dictionary skills and their influence on the language needs and abilities” (p. 44). She does not give any other information on the conduct of the survey (but perhaps this was done in her dissertation).

Most important results:

- 95% own a dictionary; 96% do not carry it (apparently to school); 87% do not keep a dictionary at school; according to 85% there are dictionaries in classrooms.
- “Purposes” (i.e. what is sought): meaning – 90%; spelling – 65%; “word history” – 11%; hyphenation – 5%.
- Circumstances of use: writing – 79%; reading – 15%.
- Information sought (“use of dictionary”) for writing: spelling – 91%; definition (i.e. meaning) – 73%; pronunciation (!) – 5%; synonyms – 4%.
- Had received “some formal instruction” on dictionary use: 24%.
- Have read: the pronunciation key – 35%; the abbreviation tables – 16%; explanatory notes – 6%; the preface or introduction – 5%.
- Familiarity with the dictionary: good – 55%; not good – 52%; “fairly well/ok” – 35%.<sup>25</sup>
- Main opinions (“attitudes”) about the dictionary: it is informative – 43%; easy (to use) – 33%; the use requires little effort – 17%; the use is worthwhile – 16%; the dictionary is “not worth the trouble” – 10%; “cumbersome; not fulfilling needs” – 8%; tedious – 8%.<sup>26</sup>

In addition, Kipfer wanted to investigate the degree to which it would be a good idea for the pupils (native speakers of English) to consult MLDs (those designed especially for non-natives). She first had 30 students take two tests “on dictionaries and their features”,

<sup>24</sup> Tono (2001: 41f.) reveals some results of “Kipfer (1985, 1987)”; however the percentages he shows are different from those I calculated for the data provided in the article’s appendix.

<sup>25</sup> There is a problem with the numbers, since the sum should be 100% (or less, but not more).

<sup>26</sup> In the text (p. 45), the author states that many respondents called the dictionary “boring” (tedious), but 8% certainly is not “many”.

one with an MLD, the other without. Then she provided an introduction to MLDs and gave them a third test. “The point was to discover what effects direct instruction in the use of learners’ dictionaries would have.” (p. 47). Results: “The group had difficulties with only four of 20 questions and agreed afterwards that looking up so many details in the time allowed was tiresome.” The subjects praised the MLD they used (LDOCE), particularly “for typography, illustrations, and clarity of explanations”.

The author concludes that the MLD is “a good learning tool for native-language intermediate-level users” (p. 49).

### **Wiegand (1985a)**

In his extensive article about “the so-called lexicographical definition”, in which he discusses the problems involved with definitions, as well as to the very term (which he considers inadequate), the author reports several studies in which he attempted to discover how users read or understand the definitions. All subjects were German university students. Wiegand carried out three investigations, with 60, 60 and 100 subjects, respectively (p. 42 ff.).

In the first two, he wanted mainly to discover whether the students think that the information contained in the definitions refers to facts or objects (e.g., “*lemon* is the fruit of ...”) or whether they think that the lemma has a meaning which is paraphrased in the definition (e.g., “*lemon* is a word which means ‘fruit of ...’”). The results showed a tendency toward the second option.

The third study (p. 81 f.) was similar to the one reported in Wiegand (1984), but the lemma *lemon* was replaced by *orange*.

In addition to this research, the author undertook the following investigation (p. 49 ff.):

The subjects were 8 German university students. Wiegand talked to them about the meaning of certain words. The conversations were taped. Half of the subjects were asked “Do you know what a .... (e.g. smorgasbord) is?”, the other four had to answer the question “Do you know what ... (e.g. *smorgasbord*) means?”. Those who did not know the answer were asked to read the dictionary entry. This was done with 6 difficult words. Then the conversations continued. Wiegand wanted to discover whether the formulation of the question (once with the verb *is*, in the other case, with the verb *means*) influences the learning of words. He noted no difference.

### **Gray (1986)**

In the 1980s there began the preparation of a new edition of the *Oxford English Dictionary* (OED). The same edition was to be published in print and in an electronic version. This gigantic undertaking was conducted by Oxford University Press and the University of Waterloo. In order to know what the potential users would consult the electronic version for and what they would like to see included, the individuals responsible for the project ordered a survey, regarding which Gray supplies certain information. Without revealing how the survey was done nor how many informants participated, he lists

approximately 30 suggestions made by them, dividing them up into those which could be adopted quite easily and others “that would require some fairly heavy revisions of the *New OED*”. I will cite only a few of each group.

- First group:
  - The informants would like the electronic OED
    - a) to present archaic or obsolete terms; jargon, slang, and buzzwords; loan words from other languages; variant meanings of words for different types of English (e.g., West Indian, Australian); homonyms, synonyms, antonyms;
    - b) to list quotations by author, source and date; quotations with given strings; all verbs with a recurring pattern, e.g., verb + object + infinitive; lemmas by subject classification.
  - They would like the electronic OED to be able to search by phonetic spelling and to be used as a reverse-alphabetized dictionary.
- Second group:
  - The electronic OED should be able to search semantic fields, generate frequency ratings from the entire corpus of citations, do spelling and style checking and serve as a guide to usage.

In Benbow et al. (1990) there is a report of another survey motivated by the OED project.

### **Jackson (1988)**

[Nesi (2000: 5 f.)]

According to Nesi, the questionnaire of Jackson’s survey was shorter and simpler than Quirk’s (1973), “with less technical jargon”, but it “yielded similar results”.

It was administered to 50 students beginning a degree course in English language and literature, and 36 students beginning a degree course in Speech and Pathology and Therapeutics. The respondents reported that they used their dictionaries most frequently to look up meanings and spellings, and once again showed very little interest in pronunciation, parts of speech and etymology.

Since Jackson’s book was published in London, we may assume that the survey was carried out in the UK.

### **Summers (1988)**

This article has been cited by many authors, but almost exclusively the part concerning the use of English dictionaries by foreign learners.

However, in one short item, Summers also briefly describes an investigation into native speakers’ use of dictionaries in the UK (p. 113 f.). The survey was undertaken “by Longman” (the publishing house in which she worked, so she speaks of “our research project”). Summers does not reveal the number or characteristics of the respondents nor how the survey was conducted. Results:

- The information most sought: meaning first, spelling in second place.
- The respondents were interested in the meaning of “hard words” (“words commonly confused or misused”, “encyclopaedic words”, “new words”, “rare or obsolete words”).

- The dictionary “was more commonly referred to for word games and to settle family arguments than for schoolwork or individual interest”.

Please see Summers (1988) again in sections 2.2 and 5.1.2.

### **Hernández (1989)**

In this PhD thesis, published in book form, about Spanish school dictionaries, the author reports on the following survey (p. 110-121):

Three versions of a questionnaire were administered to informants living on Tenerife (the largest of the Canary Islands). The respondents of questionnaire A were 300 elementary school pupils (fifth and eighth graders) and 100 high school students. Questionnaire B: 500 first year students at a teachers' college (“Escuela de Magisterio”) and 50 fresh graduates of that college. Questionnaire C: approximately 50 elementary and secondary schoolteachers.

Results of questionnaire A (elementary and secondary school students):

- Dictionaries used: none – 7%; 14% did not know the name; 80% of the remaining used one of four dictionaries; the other 20% indicated eleven different dictionaries.
- Acquisition: the dictionary was bought by the parents – 42%; recommended by the teacher – 26%; bought by the student (without recommendation) – 19%; received as a present – 7%; recommended by a bookseller – 6%.
- Complaints about: in the first place, lack of lemmas; then, lack of clarity in the definitions; in the third place, lack of examples.
- Subjects in which the dictionary is used: in most cases, in Spanish (native language); other respondents indicated Spanish and Social Sciences; 3% answered that they used it in all subjects.
- Does the student consult a dictionary at home when he does not know the meaning or spelling of a word? – Yes: 60%; no: 21%; sometimes: 19%.

Results of questionnaire B (undergraduates and graduates):

- Dictionaries used: none – 5%; 15% did not remember the name; 15% used encyclopedias; 20% used one specific school dictionary; 5% used a general L1D; the others used one of five other school dictionaries.
- Complaints (in decreasing order): lack of examples; the definitions are quite confusing; lack of senses (various meanings of the lemmas).
- 95% never had received instructions on dictionary use; 5% seldom.
- Recommending dictionaries: none – 35%; one specific school dictionary – 25%; another one – 25%; a specific L1D – 10%; another L1D – 5%.

Results of questionnaire C (teachers):

- Few teachers knew the whole title of the school dictionaries. (Hernández lists the most cited ones.)
- Complaints (in decreasing order): the number of lemmas in these dictionaries is insufficient; lack of examples; lack of clarity in the definitions; circular definitions.
- Recommending dictionaries: the majority did not recommend any specific school dictionary (“because they are more or less the same”); others would recommend the dictionary with the largest number of “terms and senses”.
- None of the teachers had received information about lexicography.
- All of them opined that the dictionary is an indispensable reference work and that in the different stages of school education different dictionaries should be used.

### Ibrahim & Zalessky (1989)

The survey reported by the authors is summarized in this subchapter because the majority of respondents were native speakers (of French), but the study was carried out among foreign learners of French as well. The French native speakers were 54 elementary school pupils (fourth and fifth graders – “élèves de cours moyen de 1<sup>a</sup> et 2<sup>a</sup> année”), 99 pupils of the so-called “collège” (being in the fifth, sixth or eighth grade of an elementary school), and 66 students in the last two years of high school (“lycée”). Outside France, the survey was conducted among university students learning French: 40 in China, 30 in the US, and 42 in Japan. The questionnaire, which is attached to the article, consisted of 21 items.

Only some of the data are shown in numbers, and the presentation is sometimes confusing (for example, joining the results of several questions in the same paragraph).

Certainly not all details are of interest; so I cite only a few general results:

- Ownership of dictionaries:  
All French respondents owned at least one L1D; 20% to 50% owned more than one; one sixth of the Chinese, one tenth of the Americans and one eighth of the Japanese did not own any dictionary; the others owned dictionaries for foreigners, but the authors do not reveal if they were monolingual or bilingual.
- Frequency of use:  
Most respondents consulted dictionaries with the following frequencies: French students – frequently or sometimes; Chinese and Americans – frequently; Japanese – sometimes. (Since “frequently” and “sometimes” were not defined in the questionnaire, the respondents had diverse ideas as to what these words mean.)
- Information wanted:  
The French students seem to have looked up mainly the spelling of words occurring in their classes. In the case of frequent words, the third group sought synonyms. The Chinese respondents were more interested in information about language register, and the Americans in idioms. As to the Japanese, the authors list only some of the words that were looked up.
- When the dictionary does not help:  
In this case, the foreigner groups and some French students considered the dictionary to be poor. The foreigners and the French high school students answered that they continued searching in another one. The same group of French respondents tended to ask the parents for help.

The authors were aware of the problems of surveys, knowing that they cannot reveal actual use (p. 24). However, even if actual use had been observed, the results could not be generalized, especially in the case of the foreign respondents, because of their small numbers. It would have been better if the survey had been conducted only in France, with more informants. Apparently the authors – who do not include any references – were not familiar with Galisson’s (1983) survey (cf. 2.2).

### Benbow et al. (1990)

The survey reported by the authors had the same motive as the preliminary one reported by Gray (1986), and was again conducted by researchers at Oxford University Press and the (American) University of Waterloo.

A 12-item questionnaire was sent to 982 people whose addresses had been found in e-mail lists and lists of lexicographical associations. Three hundred sixty-four questionnaires (37%) were returned. Of these, 95 (26%) came from the US, and the others from the UK and other parts of the world. In addition, the same questionnaire (which contained not only questions about the electronic version of the OED, but some general items about dictionary use as well) was used in 133 interviews (88 in the US), so that the results are based on the answers of 497 respondents, 69.6% of whom were university professors, and 16.1% of whom were non-native speakers of English.

Some results:

- Frequent use of reference works: OED – 86%; thesauri – 65%; encyclopedias – less than 60%. 44% mentioned other reference works. More than 75% use the dictionary in encoding activities or text revision.
- 65% consider dictionary use both simple and complex.
- Use of the OED: weekly – 41%; daily – 31%; monthly – 13%.
- 71% use electronic databases.
- “Given ideal access to an electronic version [of the OED], 83% would use it at least once a month for simple queries and 86% would use it at least once a month for complex queries.” (p. 160)
- Main suggestions for inclusions in the OED: synonyms and antonyms – 70%; hyphenation, indication of pronunciation using the symbols of the IPA (International Phonetic Alphabet), proper nouns, and word frequency statistics – approximately 50% each; illustrations – 20%.
- The advantages of the electronic version would consist mainly of access to entries; register labels, quotations and etymological information would be the principal types of information sought.

Benbow et al. did many cross-tabulations, analysing the relations between, for example, country of residence or profession of respondents and frequency of use, information wanted, or intended use of the electronic version. Results are shown in many graphs and tables.

### Ripfel (1990)

The author wished to obtain information on the use of German L1Ds, not by a special group (e.g. students), but by the German population as a whole. Therefore, people of different ages, sexes, professions and education were chosen at random as informants. Ripfel obtained data from 89 respondents. She admits that these cannot be considered representative and explains that for financial and organizational reasons a large survey with samples selected genuinely at random would not have been feasible. One positive characteristic is that, in contrast to the surveys cited above, research assistants were present and, in most cases, filled out the questionnaire with the answers given orally. Another positive point is that the questionnaire was attached to the report. The author herself estimates that the questions were formulated in such a way as not to cause problems of comprehension.

Ripfel distinguishes general L1Ds and orthographic dictionaries (concerning the latter, see some remarks above in Kühn & Püschel 1982).

Most important results:<sup>27</sup>

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<sup>27</sup> For the sake of simplification, I rounded off the percentages (which the author presents with two decimal points, e.g. 41.57%).

- 42% owned a (German) L1D.
- Answers of those who did not own any L1D:
  - 52% said that sometimes they did not know the meaning of a word.
  - When not knowing the meaning of a word, 50% would consult an encyclopedia; 50% would ask friends or relatives.
  - Respondents would like to have an L1D at hand to look up: 24% – spelling; 17% – the senses of polysemous words, 17% – etymology, 11% – use of idioms and grammar.
- For those who owned an L1D, the most important or sought-after information was: meaning (or sense differentiation in the case of polysemous words); spelling; etymology; synonyms; use of idioms; grammar; hyphenation.
- Those who owned an L1D consulted it: one or more times per week – 27%; several times per month – 27%; once a month – 27%.
- Circumstances or objectives of use: to look up the meaning of technical terms – 30% (of 69 answers); while reading newspapers or magazines, listening to the radio or watching TV – 23%; at school or otherwise studying – 13%; during everyday conversation – 10%; in word games – 9%; in order to explain words to own children – 7%; doing homework – 4%; in writing letters or other texts – 1%.
- Manner of consultation: reading the whole entry – 19 respondents; skimming the whole entry – 8 respondents; stopping at the first definition – 5 respondents. 10 respondents said they follow cross-references.
- Work with the dictionary at school (i.e. consulting dictionaries in class) in the past: no – 66%; yes – 18%; could not remember – 16%.
- 62% of those who had worked with dictionaries in class now owned an L1D; of the others, only 29%.
- 73% considered the use of L1Ds in class important.

### **Voigt (1991)**

The author reports a survey among German university students (of the fields of philology, mathematics and/or physics) and among foreigners learning German in Germany. Voigt does not reveal the number of respondents. The questionnaire items concerned the types and quantity of dictionaries used, the circumstances of use, the desired information, the helpfulness of the dictionaries, and suggestions for improvements.

Results are shown only in graphs, in which differences may be perceived, but not the exact figures or percentages. Therefore, I will not present them here.

### **Brito (1992)**

In the context of a study on reading strategies of Brazilian school children (at the end of elementary education), the author conducted a little survey of dictionary use. Unfortunately she does not reveal the number of respondents or quantitative data. Her conclusions are:

- Teachers opine that an efficient reader consults a dictionary when other strategies fail, but, on the other hand, they constantly encourage their students to look up unknown words.
- The school children think that a good reader is able to understand a text in one reading and say that they constantly use a dictionary.

Then Brito had the students read a text and make an oral protocol. Analysing the protocols, she discovered that the pupils “constantly resorted to the dictionary” (p. 100).

Later, one of the two groups was instructed in reading strategies. After that both groups read a second text, again making oral protocols. This time Brito noted that the group which had received the instruction “resorted to other strategies to solve comprehension problems; they did not restrict themselves to dictionary use” (p. 101).<sup>28</sup>

### **Wolf (1992)**

Wolf's survey was carried out at the end of the 1980s in the former German Democratic Republic, where sociological research was forbidden (p. 296). Even so the author managed to distribute 500 questionnaires, of which 288 were returned. The respondents were of diverse ages and professions, so that Wolf believes that, although the sample does not meet statistical requirements, many questions concerning practical and theoretical lexicography could be cleared up (*ibid.*).

Several items of the questionnaire concern the ownership and use of various types of German dictionaries, which is of less interest here.

Some of the results:

- Approximately 60% of the respondents thought they had sufficient knowledge of the microstructure of their dictionaries (p. 335).
- Reading of the introduction (or user's guide): yes – approximately 60%. 15% asserted they had read it before the first consultation. Those who did not read it considered the reading unnecessary and too much work (p. 335 f.).
- Main reasons for consultation (p. 345 f.): to resolve doubts – 90%; to discover the meaning of foreign words – 78%; to get information on something they did not know – 75%; to understand infrequent idioms and collocations – 57%, to discover the senses of polysemous words – 39%.
- Successful look-ups (which varied according to the type of dictionary used): orthographic dictionary – 75%; dictionary of foreign words – 50%; dictionary of synonyms – 25%; general L1D – approximately 6% (p. 348). (The author, who had divided the respondents up according to their education level, noticed that almost all of the few who said their look-ups in general L1Ds were successful had a higher education.)
- The dictionary's utility: The majority of respondents who asserted that their look-ups were successful quite obviously considered the dictionary helpful. Those who said they did not find the information they wanted indicated the following reasons: lack of clarity or completeness (25%); lack of the lemma they had been looking for; difficulty in understanding the grammatical information (p. 351).
- Teaching of dictionary use: dictionary use can be learned – 86%; instructions in dictionary use are necessary – 68%.

Wolf obtained a lot of information on her respondents' dictionary use, but, apart from the general problems of surveys, she made the mistake of not differentiating among the various dictionary types. It is true that she sometimes separates the data referring to specific types, but in other cases she makes general assertions about dictionary use which are valid only for certain types. This is evident in the item on successful look-ups: it is quite easy to consult an orthographic dictionary (75% said they were successful), but it seems to be

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<sup>28</sup> I did not include this investigation (in which the TAP method was used) in chapter 3 because the author does not reveal any quantitative data.

much more difficult to use a general monolingual dictionary (only 6% success), and it is exactly this type whose use is mostly investigated.<sup>29</sup>

### **Blok (1994)**

[Dolezal & McCreary (1999: 15)]

Blok surveys final examination test results and language teaching methods related to dictionary use in Dutch elementary schools. He finds that students have little experience with dictionaries and are unable to use the information on word meaning, grammatical information, usage, or etymology. He also finds that teachers are unaware of the difficulties students have with dictionaries and are overly optimistic about their students' ability with these dictionaries. (Dolezal & McCreary 1999: 15)

In this short summary we are not informed of the number of respondents or the types of dictionaries they used. Since the survey was made in elementary schools, the reference works were probably L1 school dictionaries. On the other hand, Hulstijn & Atkins (1998: 9) mention Blok's study in her article, which focuses on MLDs, so this is why the use of MLDs may also have been included in the investigation.<sup>30</sup>

### **Azorín Fernández (2000, 2000a, 2007)**

Azorín Fernández (2000, 2000a, 2007) reports on questionnaire surveys carried out in the second half of the 1990's among Spanish students and teachers, regarding the use of L1Ds.<sup>31</sup>

#### Students' questionnaires

The informants were 1,525 students of three different levels: the seventh grade of primary education (PE) – 652; the third grade of “secondary education” (SE) – 571; “bachillerato” (B) – 302.<sup>32</sup>

Some results:

- On all three levels, more than 90% use an L1D.
- Percentages of students who think that they are capable of using the dictionary: PE – 49%; SE – 45%; B – 52%.
- Percentages of students who were taught by the teacher how to use the L1D: PE – 42%; SE – 46%; B – 43%.
- Information types mostly sought:
  - meaning: PE – 24%; SE – 25%; B – 29%;
  - spelling: PE – 16%; SE – 16%; B – 19%;

<sup>29</sup> Two remarks: a) The tiny percentage of look-up success in general MDs (6%) is suspect. It may be an error.  
b) Although MLDs are special dictionaries, I have included them here among general MDs.

<sup>30</sup> It should be explained that although Dolezal & McCreary (1999) deal with “pedagogical lexicography”, i.e. especially with MLDs, they summarize some studies on L1Ds or L1 school dictionary as well, e.g. Miller & Gildea (1984) and Nist & Olejnik (1995).

<sup>31</sup> In Azorín Fernández (2000a, 2007) the teachers are not mentioned, and in Azorín Fernández (2007) yet another study is described, which is summarized in chapter 3.

<sup>32</sup> In PE, the students are aged 6-12, in SE 12-16 and at the “bachillerato” level, 16-18. In Azorín Fernández (2000), instead of or together with “bachillerato”, the so called “Curso de Orientación Universitaria” (COU), which is a university preparation course, is mentioned.

- synonyms/antonyms: PE – 11%; SE – 14%; B – 19%;
- verb pattern (“*régimen verbal*”): PE – 10%; SE – 10%; B – 8%.

### Teachers' questionnaires

Two hundred sixty-four teachers filled in the questionnaires, *viz.*, 115 from primary education, 77 from secondary education and 72 from the “*bachillerato*”.

Main results:

- Information types mostly sought:
  - meaning: PE – 23%; SE – 22%; B – 22%;
  - spelling: PE – 19%; SE – 19%; B – 17%;
  - synonyms/antonyms: PE – 17%; SE – 18%; B – 15%.

### **Candalija Reina & Marimón Llorca (2000)**

The authors, who mainly deal with the importance of the teaching of grammar in L1 education, also present the results of a questionnaire survey of the use of L1Ds among Spanish elementary and high school students. Apparently the questionnaire contained eight or more questions on the types of information sought in the dictionaries, but the authors only present the data related to three questions concerning grammatical information: 1) part of speech; 2) gender; 3) plural forms.

The survey was carried out among students of primary education (PE), secondary education (SE) and the university preparation course called COU.<sup>33</sup>

Unfortunately, the number of informants was not mentioned!

In three tables and three graphs, the authors show “*valores*” (supposedly numbers of answers) and percentages of the total of answers regarding the purpose of dictionary use.

Results (showing absolute numbers of those who look for the respective information and, after the slash, percentages relative to the total number of responses):

- Question 1 (part of speech)  
PE: 177 / 7%; SE: 123 / 6%; COU: 23 / 2%.
- Question 2 (gender)  
PE: 129 / 5%; SE: 58 / 3%; COU: 14 / 1%.
- Question 3 (plural forms)  
PE: 99 / 4%; SE: 37 / 2%; COU: 8 / 1%.

### **McKean (2000)**

Writing about the role of dictionaries in L1 education, the author describes a survey intended “to discover how dictionaries were being used in the classroom in the United States” (p. 83).<sup>34</sup> As in Barnhart’s (1962) study, the informants were teachers.

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<sup>33</sup> Please see the previous footnote on PE, SE and COU.

<sup>34</sup> McKean affirms that the study was undertaken by “Scott Foresman, a K-6 textbook company and a part of Pearson Education” (p. 83). In the acknowledgements, she thanks “Marni Weil of Scott Foresman’s Marketing Information Department for coordinating and distributing the survey and for her wonderful editing and consolidating of the survey results”. In the references, Marni Weil appears as the author of *Dictionary Usage Mail Surveys*, published in 1999 (Glenview, IL: Scott Foresman).

Two mail surveys were done. One was directed at fifth and sixth grade Language Arts teachers with a wide range of teaching experience; the other targeted new teachers (those with less than 3 years of teaching experience). 1300 surveys were mailed (1000 general surveys and 300 to new teachers; 400 surveys were returned (311 from the general survey and 89 from new teachers). The general survey asked about the dictionary-based activities or lessons that the teachers used, where the teachers found their ideas for dictionary activities, and if there were any obstacles that they encountered in teaching with or using their current dictionaries. The survey of new teachers asked what they had learned in their teacher training and how often they used what they had learned in their training in the classroom. (p. 83 f.)

Some results (the percentages refer to the number of informants who returned the questionnaire):

- Experienced teachers
  - Nearly 50% used the dictionaries “for ‘traditional’ teaching of dictionary skills” (p. 84). Students were asked mostly to look up definitions/meanings (30%), parts of speech (12%), guide words (8%), or spelling (7%).
  - More than 70% “supported individual student use of the dictionary in class a few times a week or more often” (*ibid.*).
  - Almost 25% made use of “dictionary games” in their classrooms (*ibid.*).
  - More than 60% “use the dictionary for journal writing [...] a few times a week or more, mainly to improve students’ word choice” (p. 85).
  - More than 50% used the dictionary daily in class for regular class instruction.
  - Obstacles that kept them from doing more dictionary activities: 67% “wished they had more ideas for activities or lessons, 58% wanted more class time, and 20% wanted more dictionaries” (*ibid.*).
- “New” teachers
  - They claimed that they “were taught only how to teach traditional dictionary skills and that not much time was spent on that”. “Only 12% [...] said they used daily what they learned in their teacher training.” 52% used it “rarely or never” (p. 86).

### Candel (2001)

Surprisingly, this article reports a survey undertaken in 1985. According to the abstract, “A survey carried out in 1985 made it possible to gather information about the use of dictionaries for French scientific and technical words. Fifteen years later, previous and current needs and data are analysed and compared.” In fact, as to “15 years later”, only some brief remarks are made concerning some technical terms. Therefore, I will describe only the 1985 study.

Five hundred questionnaires were sent out, mostly to laboratories of the French “CNRS” (“National Centre for Scientific Research”); in addition, 60 were sent to “users of French” in Melbourne. One hundred twenty-nine were returned from the French research laboratories, and 51 from Melbourne.

In several tables, the author shows the status of the informants; for example: teachers – 40%; researchers – 27.2%; translators – 7.2%; university students – 5.5%; etc.

Main results concerning dictionary use:

- Purpose: to translate – 22.31%; to define a word – 20.86%; to understand a word – 19.83% ; to write a text – 18.18%; to better explain a word – 11.57%; to give a talk – 6.4%; to check spelling – 0.82%.
- Frequency: often (“more than 10 times per year”) – 72.22%; sometimes – 25%; seldom – 2.77%.
- Local: at home – 82.02%; at work – 73.88%; somewhere else – 13%.
- Type of dictionary consulted (in a total of 466 consultations): general dictionary – 281; encyclopedia – 96; technical dictionary – 89.
- Main dictionary types consulted by informants from Melbourne (out of a total of 122 answers): general monolingual – 41; general bilingual or multilingual – 39; monolingual encyclopedia – 22; bilingual or multilingual encyclopedia – 4; monolingual technical or specialized – 8; bilingual or multilingual technical or specialized – 8.

Without mentioning numbers, Candel also informs what types of words were looked up and what problems were perceived by the informants (e.g. the difficulty to find technical words). At the end, she remarks that the situation in 2000 was better, i.e. that many dictionaries provide more information (e.g. example sentences).

### **Haß [Hass] (2005)**

This paper deals with an electronic German dictionary (*Wissen über Wörter*), which was being produced and was going to be made available online.

Haß first imagines what types of information users might want to search for in three different situations: reception, production and vocabulary learning (and general interest in the German language).

Since in electronic dictionaries such information is given on different pages, Haß wanted to discover which terms users would prefer to see on those buttons that need to be pressed in order to open the respective pages.

427 people filled in a questionnaire. Most of them (82%) were students at two German universities. 71% were native speakers of German.

Apart from some general questions, they were asked which terms they would prefer on the buttons in the three afore-mentioned situations of use.

Main results:

- General questions:
  - Most informants do not distinguish between dictionaries and encyclopedias; the term *dictionary* for most of them refers to BDs; and the dictionary type most frequently used is the dictionary of foreign words. Types most frequently used in different situations: in production – the monolingual general dictionary; in reception – the dictionary of foreign words; in cases of linguistic curiosity – the etymological dictionary.
  - 80% expressed the opinion that the dictionaries they commonly consulted were user-friendly.
- Questions about preferred German terms for hyperlink buttons (I cite, in English, only the two most frequent answers):
  - When searching for the meaning of a word: *meaning* – 16.33%; *definition* – 15.77%.
  - When wishing to know whether a certain word has a political connotation: *political language* – 13.82%; *connotations* – 12.63%.
  - When wishing to know whether a certain word has always had a negative connotation: *etymology* – 12.43%; *word history* – 11.20%.
  - When searching for information on discriminatory words: *evaluation* – 12.16%; *connotation* – 11.94%.

- When searching for the correct past participle of a certain verb: *present perfect* – 15.51%; *basic verb forms* (“*Stammformen*”) – 14.78%.

The author concludes that on some buttons two different terms should be written and that there should be a kind of glossary of all terms.

### Azorín Fernández (2007)

Please see Azorín Fernández (2000) in this subchapter and Azorín Fernández (2007) in chapter 3.

### Chatzidimou (2007)<sup>35</sup>

In this article the author reports on three different questionnaire surveys, carried out in Greece in 2004, 2005 and 2006, respectively.<sup>36</sup> The informants were 192 primary school pupils, 182 primary school teachers and Greek language teachers in secondary schools, and 340 undergraduate university students. The studies were motivated by the following situation in Greece:

“[...] there is still a lack of theoretical studies and empirical research of dictionary use, especially in educational practice. [...]” (p. 92)

The state does not seem to make any systematic effort to acquaint the teachers with the dictionary and train them in its use. No school dictionaries are officially prescribed in either primary or secondary schools. However, some academic teachers have made direct or indirect efforts in recent years to convince the state and the educational community about the importance of dictionary use in schools and education in general. Thus, specific teams of authors have been commissioned by the state to compose dictionaries for primary and secondary school – the end-products of this initiative are to be introduced in schools in the coming academic years. (p. 93)

#### The survey of primary school pupils' dictionary use

The pupils were attending the last two classes in five schools, which were randomly selected. “The analysis and the elaboration of the questionnaire data were carried out with the use of the statistical programme ‘Statistical Package for the Social Sciences’ (SPSS).”

#### Results:

- Ownership of types of dictionary (or existence of dictionaries at home): BD – 86.3%; (Greek) MD – 83.6%; (Greek) encyclopaedic dictionary – 76.4%.<sup>37</sup>
- Frequent use (“often” or “very often”) of dictionary types:
  - at home: BD – 53.4%; MD – 48.8%; EncD (= encyclopaedic dictionary) – 43.6%.

<sup>35</sup> Although BDs are mentioned in this study, I briefly summarize it in this subchapter because little importance is given to them: a) not even the FL of the BDs is indicated; b) apart from the questions on ownership, use and difficulty of use, no distinction is made between MDs and BDs; c) BDs – or FL dictionaries – are not mentioned in the survey of teachers' use.

<sup>36</sup> The findings of the first one were already presented at the 26<sup>th</sup> Annual Meeting of the Department of Linguistics, Aristotle University of Thessaloniki. The second one is based on the author's PhD thesis, and the data of the third one are derived from his master's dissertation.

<sup>37</sup> Apparently the BDs are of the language pair English and Greek. As to MDs and encyclopaedic dictionaries, I will not mention each time that they are of the Greek language.

- at school: MD – 37.3%; EncD – 14%; BD – 13.6%.
- Categories of information sought often or very often: meaning – 51.6%; spelling – 48.7%; synonyms – 21.9%.
- “No” or “little” difficulty in using types of dictionaries: BD – 90.3%; MD – 89.1%; EncD – 86.1%.
- Pupils were encouraged “often” or “very often” to use dictionaries: by teachers – 50%; by parents – 33.8%.
- Ownership of EDs (“at home”): 47.1%. Of these, 45.4% used them often or very often, 93.2% had no or little difficulty to use them.

### The survey of teachers' dictionary use and attitudes

#### Results:

- Ownership: almost all of the 182 teachers owned a Greek MD; 77.3% knew that their students had a (Greek) dictionary at home.
- Importance of dictionaries: “very important” as a “book for answering language questions” – 87.8%; “very important” as a reference book – 86.3%.
- Dictionaries contribute “to a large extent”: to vocabulary enrichment – 76.4%; to language teaching in general – 70.2%.
- Frequent use of types of dictionaries “in the process of school teaching”: MD – 76.2%; EncD – 52.6%; spelling dictionary – 38.2%; “defining dictionary” – 36.8%; etymological dictionary – 20.4%; electronic EncD – 10.6%; general ED – 8.3%.
- Level of consultation of the dictionary’s preface before use: “to a small extent” – 51.1%; “to a large extent” – 33.9%; “not at all” – 15%.
- Reasons for dictionary use during the teaching procedure: “to enrich the students’ vocabulary” – 79.3%; “to improve the students’ language usage” – 74.4%; “for text comprehension” – 72.2%; “to reinforce the students’ linguistic competence” – 68.7%; “to increase students’ motivation” – 68.1%; “for text composition” – 57.8%; “to familiarize students with the alphabetical word classification” – 53.3%; “to develop students’ critical thinking” – 35.7%; “to convey to students information on the history of their language” – 28%.
- Students’ work with the dictionary assigned by the teacher: a) individual exercises – 66.3%; group exercises – 43.5%; b) obligatory exercises – 62.2%; optional dictionary work – 39.5%.

The author adds the following information obtained through cross-tabulation of the data:

Secondary school teachers used more than one dictionary in preparation for teaching, unlike primary school teachers. Primary school teachers ‘often’ used the dictionary in the teaching process for spelling purposes, whereas their colleagues from the secondary schools did so mainly for other purposes, particularly for semantic information. Teachers who knew one or more foreign languages appeared to be more familiar with dictionary use.

### The survey of undergraduates' dictionary use

The 340 informants “were in their second, third, fourth or higher years of study” in the Department of Primary Education of the School of Education of a Greek university.

#### Results:

- Ownership of types of dictionaries: BD – 92%; MD – 87%; EncD – 57.1%.
- Frequent or very frequent use of dictionaries: BD – 35.6%; MD – 33.9%; EncD – 17.5%.
- Categories of information often sought: meaning – 36.4%; spelling – 27.0%; synonyms/antonyms – 17.5%; etymology – 16.6%; examples of usage – 12.7%.
- “No difficulty” using a: MD – 89.9%; BD – 79.4%; EncD – 77.6%.

- (Dis)satisfaction with their competence in using a dictionary: satisfied – 97.1%.
- (Dis)satisfaction with the information provided by the Greek MD: satisfied – 87.8%.
- Instructions received on dictionary use “more than once”: at primary school – 30.3%; at “Gymnasium” (“first three years of secondary school”) – 22.1%; at “Lykeio” (“last three years of secondary school”) – 16.0%; at university – 8.9%.
- Necessity of dictionary skills teaching at the various levels of the Greek educational system: at primary school – 94.0%; at “Gymnasium” – 89.3%; at “Lykeio” – 67.7%; at university – 61.3%.

### **Gomes (2007)**

In her doctoral thesis on vocabulary acquisition by Brazilian elementary school children and on Brazilian MDs for such students, the author also reports on a questionnaire survey whose informants were 50 elementary school teachers. The main results are expressed in the following terms:

92% of the teachers assert that they practice the reading of dictionaries in class; 40% use it just to check meaning. [...] 20% use it as an aid in text comprehension, which usually is made difficult by unknown words. However, it is alarming that 20% of these teachers do not believe that the dictionaries’ contents may enrich children’s vocabulary. (p. 54)

### **Scherer (2008)<sup>38</sup>**

[Müller-Spitzer (2008: 232)]

In this master’s dissertation, the author reports a questionnaire survey of the use of OWID (*Online-Wortschatz-Informationssystem Deutsch*), an “Online Vocabulary Information System of German” (<http://www.owid.de/index.html>), which includes four different German online dictionaries. Scherer focused on one of them, *elexiko*. The main objective was to discover users’ opinions regarding the dictionaries.

58 informants filled out “a standardised online-questionnaire, which was constructed according to the multiple-choice method”.

Müller-Spitzer cites two results: 1) 39.6% of informants agreed, 37.7 disagreed and 17% of informants strongly disagreed with the assertion “It is clear that the headword-list shown presents entries from all four dictionaries”; 2) 64.2% knew, but 24.5% did not remember what the different colours of the headwords mean.

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<sup>38</sup> Müller-Spitzer provides the following bibliographical data: Scherer, Tanja (2008). *Umsetzung von Zugriffsstrukturen bei Online-Wörterbüchern*. Master’s thesis, Mannheim University University.

## 2.2 Surveys of the use of monolingual learners' dictionaries or of bilingual dictionaries

### Tomaszczyk (1979)

This survey has been cited by many who have written about dictionary use, e.g. Béjoint (1981: 208), Hartmann (1987: 14 f.), Bogaards (1988: 132), Ripfel & Wiegand (1988: 498), Zöfgen (1994: 36), Humblé (1997 [2001: 42]), Coura Sobrinho (1998: 58 f.), Nesi (2000: 6 f.), Tono (2001: 43 ff.), Thumb (2004: 4 f.). It was the first survey of foreign language dictionaries.

While in many subsequent surveys the sample of respondents was smaller, the Polish author had already obtained in this first investigation a relatively large empirical base, since 449 questionnaires, of the 1,000 which had been sent out, were filled in and returned.

The informants were 117 foreign students (55 in American universities and 62 in Polish universities), 167 Polish learners of foreign languages (in Poland), 60 teachers of English and 105 translators. As was mentioned in Section 1.3.1, one weak point in Tomaszczyk's conclusions is that he did not differentiate among these groups. According to Zöfgen, the author presented the results from only two groups (Group I – students, Group II – teachers and translators), but, in reality, he sometimes made more distinctions: Group Ia – foreign students (117), Group Ib – Polish students in Poland (167), Group IIa – language teachers and literary translators (85), Group IIb – technical translators (80). Tomaszczyk may be criticised not only for not having maintained this division in all results, but also for the differentiation itself. Why for example, join language teachers and literary translators? Neither were the foreigners studying in the US distinguished from those living in Poland nor were the various languages which the Polish were studying differentiated.

On the other hand, one very positive aspect is that in his questions the author distinguished dictionary use in six different circumstances: reading, writing, listening, speaking, L<sub>2</sub>-L<sub>1</sub> translation and L<sub>1</sub>-L<sub>2</sub> translation.<sup>39</sup> In addition, the questionnaire consists of a large number of items (57), so much so that Hartmann (1987: 15) remarked that "the comprehensiveness of the investigation is impressive".

Unfortunately, Tomaszczyk neither shows the questionnaire nor reveals the data on all the items.<sup>40</sup> Instead, he conjoins the results in eight tables. Other data are revealed in certain passages, for example the respondents' suggestions and comments.

In his concluding remarks (p. 116), the author summarizes the results as follows:

- "a vast majority of foreign language learners and speakers use dictionaries, but [...] their dependence on dictionaries decreases as their command of the language increases;"
- "those who really depend on dictionaries (advanced learners and speakers) have a fairly wide variety of both types and tokens, even though they are sometimes difficult to get;"
- "although the use of monolingual dictionaries becomes more extensive and frequent as the subjects' sophistication increases, almost all of them continue to use bilingual ones. All subjects consider L<sub>1</sub>-L<sub>2</sub> [bilingual] dictionaries inferior to the L<sub>2</sub>-L<sub>1</sub> ones, and both types are felt to be inferior to monolingual dictionaries; [...];"

<sup>39</sup> Tomaszczyk employs the expression *language skills* (p. 108), which may be justified by the fact that certain items deal with the practice of these skills, but I prefer *circumstances of use*.

<sup>40</sup> Hartmann (*ibid.*) criticized the fact that "the presentation of numerical evidence is not always clear, the statistical analysis is incomplete, and the questionnaire is not reproduced".

- “the degree of satisfaction with the lexicographic treatment of the different types of information is the highest for spelling, stress and punctuation, [...]”
- “[...] many beginning and intermediate learners do not know their dictionaries well enough and frequently they have unreasonable and contradictory demands with respect to them.”

To these results we may add some of those presented in the tables or in other passages of his article:

- Desired information types: synonyms – 74%; spelling – 72%; idioms – 72%; stress – 65%; pronunciation – 65%; swear words and obscenities – 45%; word division – 36%; etymology – 19%. (On p. 111, where these data are provided, the author apparently forgot meaning. On p. 113 the data are different: “[...] information about established meanings of content words is followed closely by information about word division and spelling; status, usage and currency of words; and receptive and productive grammar.”)
- Dictionaries were consulted frequently in the following circumstances of use:  
Group I: translation L<sub>2</sub>-L<sub>1</sub> – 67.6%; writing – 67.3%; reading and translation L<sub>1</sub>-L<sub>2</sub> – 61.6% each; speaking – 23.6%; listening – 15.5%.  
Group II: translation L<sub>2</sub>-L<sub>1</sub> – 44.8%; translation L<sub>1</sub>-L<sub>2</sub> – 46.1%; writing – 29.1%; reading – 14.5%; speaking and listening – 4.3% each.  
(The author is astonished about the high percentage of dictionary use (63.7%, the sum of “frequent” and “from time to time”) in “speaking” in group I. He supposes that respondents referred to dictionary use “when preparing all kinds of talks, speeches and oral reports” (p. 108), and he adds: “Another possible interpretation is that when completing a questionnaire some people will check any box there is.”)
- Types of dictionaries used most (average of all circumstances) :  
Group I: BD – 54.4%; BD and MD used together – 25.2%.  
Group II: BD – 35%; MD – 26.3%; BD and MD used together – 21.5%.<sup>41</sup>

Critical remarks on this survey were made not only by Hartmann (1987: 15), as already mentioned, but also by other authors, e.g. Nesi (2000: 7). Even earlier than Hatherall (1984), quoted in 1.3.1, Tomaszczyk himself had noted one of the problems of surveys: “It is impossible to say to what extent the subjects [...] responded in the way they did because they thought they were supposed to.” (p. 116)

### Baxter (1980)<sup>42</sup>

By far the largest part of this article deals with “communicative needs” (in oral communication), among which is the mastery of vocabulary. The author had noticed that in the “vocabulary behaviour of students in many ESOL classrooms” there is a “tendency to use unit lexical items in a precise manner”, i.e. the wish to employ the exact word, and since students often do not know it, the consequence is a “very high frequency of abnormally long pauses”. According to Baxter there are many possible causes, but “an important factor” is the use of BDs (p. 329). Therefore he undertook “a study of the use of dictionaries by Japanese students of English” (p. 331).

<sup>41</sup> The data are suspect. It is improbable that in group I the BD is used more in listening (58.6%) and speaking (57.7%) than in writing (44.4%) and reading (42.9%), and that in group II the MD is, of all the types, the dictionary most used in listening (52.6%). Especially in listening one would need information, mainly on meaning, very quickly; and in MDs it is harder to find than in BDs.

<sup>42</sup> This study was summarized more or less in detail in, for example, Hartmann (1987:21f.), Bogaards (1988: 132f.), Ripfel & Wiegand (1988: 499), Béjoint (1994 [2000: 144f.]), Coura Sobrinho (1998: 49f.), Nesi (2000: 7f.), and Thumb (2004: 5f.).

Sixty-two of the 342 informants were majoring in English; the others were from the faculties of Education, Economics, Agriculture, and Engineering. Twenty percent were in their first year, 58% in their second, and the others in later years. The questionnaire consisted of only six items.

#### Results:

- Purchase of the first dictionary: in junior high school – 88.6%; in senior high school – 11.4%.
- Type of first dictionary:  $BD_{L2-L1}$  (English-Japanese) – 97%;  $BD_{L1-L2}$  – 6.9%;<sup>43</sup> MD – 0.3.
- Purchase of dictionaries “since you started studying English”: two or three BDs – 61.1%; one BD – 7.5%; one MD – 44.8%; two or three MDs – 48.3%.
- Dictionary type most frequently used:  $BD_{L2-L1}$  – 96.7%.
- Frequency of use:
  - $BD_{L2-L1}$ : several times per week – 70.4% (majors: 17.7%; non-majors: 82.4%)<sup>44</sup>; daily – 17.9% (majors: 79%; non-majors: 4.0%);
  - $BD_{L1-L2}$ : less than once per week – 75.5% (majors: 54.8%; non-majors: 80.2%);
  - MD: less than once per week – 80.6% (majors: 33.9%; non-majors: 91.2%);
- Most important type of book used in the respondents’ studies: BD – 76.6% (majors: 69.4%; non-majors: 78.2%); grammar (of English) in Japanese – 21.9% (majors: 24.2%; non-majors: 21.4.2%); MD – 7.6% (majors: 14.5%; non-majors: 6.1%);
- Criticism of MDs: the definitions are difficult to understand – “many students” (Baxter does not reveal percentages).

Although the author did not investigate the *effects* of dictionary use, he concludes that “for this student population, the extent of [the influence of BDs] is considerable”; he recommends the use of MDs, more exactly MLDs, through which students are to gain fluency. However, he admits not only that they “need special training in reading definitions” (p. 334), but also that “a judicious combination of the two [i.e. MLDs and BDs] would be the most productive” (p. 335).

### Béjoint (1981)

Like Tomaszczyk’s (1979), this study has been cited by many authors, e.g., Hartmann (1987: 21), Bogaards (1988: 133), Ripfel & Wiegand (1988: 499), Zöfgen (1994: 37), Humblé (1997 [2001: 42]), Coura Sobrinho (1998: 60 f.), Nesi (2000: 8 f.), Thumb (2004: 5). Tono (2001) mentions it on several pages, but he errs (p. 51) when asserting that the researcher used the experimental method.

Béjoint himself cites Tomaszczyk, whose study he considers “a very thorough piece of research”. Unlike the Polish author, he “was concerned exclusively with the use of monolingual general dictionaries of English” and he admits that “both the number of questions [...] and the number of answers [i.e. respondents] were much more modest than in his study”; on the other hand, his “sample was much more homogeneous” (p. 208).

Béjoint’s informants were 122 French students of English at the University of Lyon (6 in their second year, 43 in their third year, and 16 in their fourth year), most of whom

<sup>43</sup> Baxter explains that in Japan the two types ( $BD_{L2-L1}$  and  $BD_{L1-L2}$ ) are generally not combined in one volume (p. 331).

<sup>44</sup> The percentages refer to the answers of the respective group (e.g., 17.7% of those respondents who are majors).

intended to become teachers of English. This relatively great homogeneity certainly is a positive aspect.<sup>45</sup>

Before showing the results, the author deals, in more than half of the article, with general lexicographical topics: types of dictionaries, the difference between decoding and encoding activities, the foreign student's needs in both kinds of activities (and the respective information the dictionary should provide), and the foreign student's reference skills.

Since Béjoint cites all 21 items of his questionnaire (p. 214 ff.), I will do the same, in order to give an example of questions that can be asked. Each will be followed by a summary of the main results.

- *Do you own a monolingual English dictionary?* – 96% owned at least one.
- *Which dictionary (or dictionaries) do you own?* – ALD: 45%; LDOCE: 27%; COD: 14%.<sup>46</sup>
- *Why did you choose the one(s) you bought?* – “Recommended by tutors” (85%).
- *When did you buy it?* – In the first year: 55%; in the second year: 29%.
- *What other monolingual general dictionaries do you know?* – Very few students knew of others.
- *If you use several dictionaries, is there one that you prefer? Why?* – There were few answers. Béjoint asserts that “most students prefer the dictionary they have bought, or the one they usually work with”. The motive for certain preference generally was “exhaustiveness (in terms of items covered”).
- *How often do you use a monolingual English dictionary?* – At least once a week: 52%; once a day: 40%.
- *Which types of information to you look for most often in your dictionary?* – Meaning: 87%; syntactic information: 53%; synonyms: 52%; spelling: 25%; pronunciation: 25%; language variety: 19%; etymology: 5%.
- *For which sort of activity do you most often use your dictionary?* – Translation L2-L1: 86%; written comprehension: 60%; written composition: 58%; translation L1-L2: 58%; “oral comprehension”: 14%; “oral composition”: 9%.
- *Do you sometimes browse through your dictionary without looking for anything in particular?* – Yes: 55%; no: 41%.
- *How carefully did you study the introductory matter?* – Cursorily: 55%; not at all: 34%.
- *Do you ever use the information contained in the appendices?* – Abbreviations: 40%; irregular verbs: 30%; units of measurement: 27%; proper names: 12%.
- *Do you use the codes that indicate how a word should be used?* – No: 55%. (Béjoint considered this result disappointing for lexicographers. As is well known, since that time the codes have been improved or even abandoned.)
- *Are you satisfied with your monolingual English dictionary? More, or less satisfied, than with your bilingual dictionary?* – Yes: 77%; more than with the BD: 36%; less than with the BD: 17%. (The last two percentages having summed to 53%, it is not clear what is the opinion of the remaining 47%. Are they as satisfied with the BD as with the MD?)
- *Can you recall occasions when you could not find what you were looking for?* – Many students could not remember such occasions, which explains the low percentages; unsatisfactory definitions: 29%; words missing: 28%; unsatisfactory syntactic guidance: 25%; excessively long entries: 16%; incomprehensible coding: 10%; pronunciation not indicated or not clear: 9%.
- *Can you mention any words that you were unable to find in your dictionary?* – Many students could not remember; types mentioned most often: slang words, Americanisms, technical words, compounds.
- *What kinds of words do you look up most often in the dictionary?* – Idioms very often: 68%; encyclopaedic words sometimes: 55%; culture-specific words sometimes: 53%; abbreviations sometimes: 49%; slang words sometimes: 40%. Never were looked up: common words: 66%;

<sup>45</sup> Zöfgen (1994: 37) would have preferred the results to be differentiated according to the students' level, since such distinction “probably would show interesting trends and evolutions”.

<sup>46</sup> COD = *Concise Oxford Dictionary*.

structural words: 47%; taboo words: 45%; proper names: 38%. (Béjoint comments: “The words that are looked up most often are those which typically cause difficulty when decoding.”)

- *Do you use the following?* – Examples and quotations: 70%; synonyms: 68%; pictures: 24%.
- *Under which headword would you look up the following compounds?* (Because of the specificity of this item (question 19), I abstain from citing the results and Béjoint’s comments.)
- *Do you think your dictionary is too simplified, or on the contrary too detailed?* – Too simplified: 50%; just right: 45%.
- In item 21, the respondents were free to make any remarks; the most common were: there are not enough examples nor enough idioms; there are no proper names; there are no, or not enough, Americanisms; all dictionaries should use the same phonetic transcription; typography, lay-out, and illustrations are not always clear.

In his conclusion, Béjoint asserts that the results “show a striking similarity with those of Tomaszczyk, at least when the formulation of the questions allows for close comparison” (p. 219). Although he mostly employs the term *monolingual dictionary* and does not explain the difference between MLDs and L1Ds (once he cites, on p. 209, the “EFL dictionaries” ALD, LDOCE and CULD (*Chambers Universal Learners’ Dictionary*) as being “essentially tools for communication”), he apparently defends the use of MLDs, but also alerts: “Students need to be taught how to use the monolingual dictionaries which they already possess so as to get the most out of them.” (p. 220)

### **Bensoussan, Sim & Weiss – 1981**

This research report is mentioned here because it is cited by some authors as being from 1981. However, it was published only in 1984. Please see Bensoussan, Sim & Weiss (1984) below.

### **Calanchini (1982)**

According to the article’s title, the study dealt with “national dictionaries”. What this refers to are dialectal dictionaries of the four languages spoken in Switzerland. Dolezal & McCreary (1999: 21) point out that Calanchini “reports a survey of Swiss students’ usage of the four Swiss dictionaries of French, German, Italian, and Romansch”, but in reality Calanchini does not present data, or even the number of subjects, nor does she mention a questionnaire. In fact, she only reports what she had observed or heard. For example, there are three attitudes among the students in respect to the future *Vocabolario dei dialetti della Svizzera italiana* (Dictionary of Italian Switzerland’s dialects): an optimistic one, a pessimistic one, and a “pragmatic-alarmist” one.

### **Cortelazzo (1982)**

This article is about the same dictionaries mentioned by Calanchini (1982). Cortelazzo wanted to investigate their use in Italian universities. She sent a small questionnaire to 96 teachers of dialectology, romance philology, glottology and history of the Italian language. Fifty-nine of them responded, of whom 18 said that they do not use these dictionaries, while the others answered that they use them sometimes (32) or

frequently (9). The dictionaries mostly used were Italian (mentioned 37 times), followed by Romansch (23), French (14), and German (3). Due to the specificity of the topic, I will not go into more detail here.

### **Hartmann (1982)<sup>47</sup>**

The researcher sent 600 copies of a 23-item questionnaire to more than 200 institutions in which German is taught, in South West England.<sup>48</sup> One hundred eighty-five were returned, 67 by teachers of German and 118 by high school or college students. Unlike Béjoint (1981), the author was interested especially in the use of BDs. Many students filled in the questionnaire in groups. Bogaards (1988: 33), who had read Hartmann (1983), criticises the fact that he calculated only the overall results, without distinguishing the levels of knowledge of German the respondents might have.

Results:

- Purchase of BDs: Students bought a BD in the first two years of their learning of German, without any recommendation by the teacher.
- Frequency of use: at least once a week – 58.4%; daily – 35.1%.
- Instruction on dictionary use: 80% had not been taught to use dictionaries.
- Circumstances of use (of BDs): L2-L1 translation (93.3%), L1-L2 translation (91.6%), reading (82.6%) and writing (74.2%).
- Information most looked for (according to Hartmann 1983: 198, whereas the figures in Hartmann 1982: 82 are a little different): meaning – 97%; grammar – 82%; use in context – 76%; spelling – 68%; synonyms – 58%; pronunciation – 15%; etymology – 12%; other – 5%.
- Word types consulted: grammatical words – 70%; culture-specific words – 62%; encyclopaedic words – 54%; common words – 50%; slang words – 47%; rude words – 24%; proper names – 9%; other – 16%.
- Frequency of dissatisfaction with not finding what was looked for (according to Hartmann 1983: 198): occasionally – 36%; periodically – 29%; frequently – 27%.
- Causes of disappointment (according to Hartmann 1983: 198): missing meanings (senses) – 76%; missing words – 61%; confusing or overlong entries – 49%.

The data concerning information on grammar differ from those of earlier studies. Fewer than 60% of Tomaszczyk's (1979) and of Béjoint's (1981) respondents were interested in such information. The importance given to grammar in Hartmann's survey may be due to the fact that German grammar is much more complicated than English grammar.

About the prevalence of translation as circumstance of use (in the beginning of the 1980s), the author remarks (p. 81 f.) that apparently translation is widely used in the teaching of German, that it is the most complex linguistic operation and that it seems to require the use of BDs.

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<sup>47</sup> The same study was reported in Hartmann (1983). The report – mostly that of 1983 – was summarized with more or less details by Hartmann (1987: 22), Bogaards (1988: 133), Ripfel & Wiegand (1988: 501), and Thumb (2004: 6).

<sup>48</sup> In Hartmann (1983) the questionnaire is reproduced in the appendix.

### **Chagunda (1983)**

[Zöfgen (1994: 39 f., 45); Dolezal & McCreary (1999: 22)]

Zöfgen informs only that Chagunda had dealt with the use of dictionaries by people who learn English for Special Purposes (in fact, in the title of Chagunda's M.Sc. dissertation it is EAP – English for Academic Purposes) as a second language, i.e. in an English speaking country, and that he made interviews, which, however, just substituted questionnaires; apparently the author asked the questions typical of questionnaires.

According to Dolezal & McCreary, Chagunda tape-recorded the answers. The interviews focused on two technical dictionaries. Dolezal & McCreary quote the researcher: respondents “generally disliked extravagant definitions, and ... appreciated the usefulness of diagrams in a technical dictionary”.

### **Galisson (1983)**

This article is cited, for example, by Coviello (1987: 109 f.), Bogaards (1988: 133, 136), Ripfel & Wiegand (1988: 500), Béjoint (1994 [2000: 149 f.]), and Tono (2001: 47).

The author wanted to discover the image foreigners have of their French dictionaries and whether their utilization corresponds to that image. His informants were 48 foreigners who were studying in Paris and 59 students of French in the US. In order to be able to compare the two groups more easily, he used the answers of only 48 of the Americans. All 96 subjects had an elevated level of proficiency in French; most of them were teachers or students who wanted to become teachers of French or translators. While Galisson asserted that the two groups were quite similar, Bogaards (1988: 133) remarked that the students' “learning situation” differed, since in the first group French was an L2, but in the second group it was an FL.

Galisson's questionnaire, which was filled in at home, contained 18 items. In his article, the author analyses in great detail (in seventy pages) the answers to each of the questions, providing percentages, interpreting the data and comparing the two groups. Obviously it is impossible to reproduce all these details here.

Some of the results:

- Respondents owned an average of three MDs and two BDs. Although they frequently had to search for one piece of information in several dictionaries, they evaluated them favourably and opined that dictionaries are very important in the learning of L1 and (from the intermediate level onwards) of foreign languages.
- The information most looked for was meaning, followed by spelling, in L1 as well as in FL.
- The dictionaries were used more in decoding than in encoding activities.

### **Hartmann (1983)**

This is a modified version of the report on Hartmann's (1982) survey.

### **MacFarquhar & Richards (1983)**

Being interested in the advantages of English MLDs, the authors wanted to discover the opinion of their users with respect to a specific feature, *viz.* the definition style. They distinguished three types of definition (p. 115): a) in traditional dictionaries (e.g. *Webster's New World Dictionary* – WNWD) a “virtually unlimited defining vocabulary” is used; b) in certain MLDs, there is an “effort to write clear and unambiguous definitions [...] while not restricting definitions to a defining vocabulary” (e.g. OALD); c) in other MLDs a restricted defining vocabulary of 1500 to 2000 words is used (e.g. LDOCE).

MacFarquhar & Richards’ subjects were 180 “foreign students from Asia and the Pacific enrolled at the English Language Institute at the University of Hawaii” (p. 119). They were all of intermediate or advanced level.

The researchers chose 60 relatively rare words foreign learners might look up. For each word, an individual card provided, on which photocopies of the respective entries existing in the three dictionaries mentioned above were put. “In order to minimize the effect of presentation of the definitions [...] 20 words from each dictionary were placed in the left hand position on the cards, 20 in the center, and 20 on the right. The order of these occurrences was also randomized.” (p. 119). Thirty-one copies of each card were made, giving 1860 in all (although only 30 were needed). Each participant received ten different cards (1 extra copy of each card had been made “to allow for one misanswered or unanswered card per word”), and each word was to be evaluated by 30 different learners. All respondents “also filled out a brief questionnaire which indicated their TOEFL scores and the class they were enrolled in [...]” (*ibid.*).

#### Results:

- 51.5% of respondents preferred the LDOCE definitions, 28.5% those in OALD, and 20.0% those of WNWD.

It became clear that the students preferred definitions with a restricted vocabulary.

Based on the information about their proficiency level, the authors noted that this did not influence the preference for a certain definition type. However, the preference for the LDOCE definitions was higher in students with less proficiency:

- Students with TOEFL scores below 500: LDOCE – 57%; OALD – 25%; WNWD – 18%.
- Students with TOEFL scores above 570: LDOCE – 44.2%; OALD – 33.3%; WNWD – 22.5%.

MacFarquhar & Richards admit that the results “are based on the responses of a small number of learners for a relatively small sample of words and entries” and that “it was only learners’ perceptions which were measured, and not how helpful the definitions actually are” (p. 122).<sup>49</sup>

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<sup>49</sup> Dolezal & McCreary’s (1999: 74) are wrong when saying that the authors discovered in their survey “that the students only used dictionaries to check word meanings and spellings [...]. In reality MacFarquhar & Richards, before reporting the study summarized here, only refer to some user surveys undertaken by other researchers (Barnhart 1962, Quirk 1973 etc.). Nesi (2000: 46ff.) provides a good summary of the article, but erroneously in the subchapter entitled “Observation of controlled instances of dictionary use”, and she employs the term experimental study. But then she states that “[i]n order to monitor the actual readability of the entries, subjects would have had to complete some kind of task”. (p. 47f.)

### **Bensoussan, Sim & Weiss (1984)**

In this article, the authors report several investigations undertaken in Israel (cf. 4.1.2). Here I summarize the questionnaire survey which was carried out at Haifa University.

Surprised with the results of their study on dictionary use in reading, the authors administered a 13-item questionnaire (appended to the article) “to 404 first-year students in the required English reading comprehension course, to ten of their teachers, and to another small group of thirteen third-year Psychology students whose English proficiency was of a very high standard” (p. 268). Unfortunately they do not present numerical data. In a footnote they remark that a “detailed account of the results [...] may be obtained from the authors” (*ibid.*).

Results (p. 268 f.):

- “The third year students, who were the most linguistically proficient, were most critical about dictionaries and had fewer expectations. They use dictionaries less but more selectively than first-year students. Almost half do not expect the dictionary to affect their test scores.”
- Many first-year students “think they merely need to look up words in order to understand the text”; they are not aware that one needs grammatical knowledge; they complain about difficult definitions in the MDs, and there is “also frustration with the great number of meanings given, and the inability to find the exact meaning required by the context”; although “they often turn to the [BD] if they really wish to understand the word”.
- The “teachers of first-year students do not think students use dictionaries effectively”; nevertheless “they do expect the use of dictionaries to significantly affect test scores”.
- Students and teachers think that dictionary use will slow down reading speed.
- In the teachers’ opinion, “students use the dictionary more often in class than they claimed they actually do”, and “students claimed to use more [MDs] than teachers expect”.

### **El-Sakran (1984)**

[Diab (1990: 40 f.); Zöfgen (1994: 35, 57); Dolezal & McCreary (1999: 32)]

In this master’s dissertation, the author reports a questionnaire survey in which he wanted to investigate the use of English-Arabic BDs by Egyptians living in the UK. The 36 respondents were graduates, in various fields, attending a course in ESP. The questionnaire contained 15 items.

Main results:

- 34 of the 36 respondents owned a BD; 27 of them owned one of two specific BDs.
- Although preferring BDs, the students were dissatisfied with them, mainly with the lack of examples and insufficient information, especially in one of the BDs.

Diab criticises that “although the questionnaire included some useful questions such as frequency of dictionary use, the researcher, surprisingly, did not report any findings on these questions” (p. 41). One might add that, although the dissertation dealt with phrasal verbs, no information seems to have been provided on this topic in the survey report.<sup>50</sup>

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<sup>50</sup> Diab asserts that El-Sakran “attempted empirically to test the performance of a particular bilingual popular dictionary” (p. 41), but supposedly he refers to the survey, i.e. to respondents’ opinions, not to a test.

### **Sora (1984)<sup>51</sup>**

[Marello (1989: 106 ff.), Nuccorini (1994: 586)]

Nuccorini cites Sora (1984) only among Italian studies into dictionary use which have “mainly focussed on users’ attitudes and expectations [...].”

Marello, however, provides the following information:

Sora carried out a questionnaire study among 115 Italian university students of English about their use of BDs and MDs.

Some results:

- Only 33% of the subjects had read the introduction to their BD.
- Lexical items most looked for: idioms – 66%; culture-specific words – 50%; adverbs, prepositions, conjunctions – 33%.
- 50% of the subjects were unsatisfied with their BDs (because “they do not find what they look for”, p. 111).

Sora also asked 39 university students of English to provide information about their dictionary use during a reading comprehension test and a composition (both in English).

Main results:

- Almost all subjects used dictionaries.
- As to the reading comprehension test:  
They used mostly MDs, mainly for searching unknown words or for checking those they knew (60%). All students were satisfied with the information they obtained.
- As to the composition:  
Subjects preferred BDs. They checked words already known, but not always were the look-up results satisfactory (“because clear specifications of the appropriate contexts of use were lacking in the dictionaries”, p. 107).

### **Griffin (1985)**

[Diab (1990: 45 f.); Zöfgen (1994: 40, 58); Dolezal & McCreary (1999: 37 f.)]

This is a master’s dissertation in which the author reports a survey conducted in the US. The informants were 128 foreigners – native speakers of 13 different languages – who studied ESL at Southern Illinois University and “were divided into 4 proficiency levels from beginners to advanced according to a placement test on entrance to the [ESL] programme” (Diab). The 10-item questionnaire dealt with general topics like ownership of dictionaries, frequency of use, and reading of the front and back matter. Results:

- Respondents preferred BDs, but there were “indications that higher level students tended to feel embarrassed about using a [BD] frequently in class” (Diab), “the students were not aware of the features of learners’ dictionaries, and the front and back matter in all dictionaries was ignored” (Dolezal & McCreary).

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<sup>51</sup> Bibliographical data according to Nuccorini: Sora, F. 1984. A study of the use of bilingual and monolingual dictionaries by Italian students of English. *Papers on Work in Progress* 12: 40-46.

Diab adds that, based on the answers, Griffin designed “a set of materials on dictionary-skill instruction”, which was used and appreciated by “55 students of 9 different language backgrounds” (cf. subchapter 7.2).

### **Heath & Herbst (1985)**

In this article, in which Heath & Herbst advocate the teaching of reference skills, they mention a survey which was conducted in 1983 in two German universities about the use of English dictionaries. The informants were 160 German undergraduate English majors, from freshmen to seniors. Unfortunately, the authors do not reveal the number of questionnaire items. Results:

- Many students did not know that certain dictionaries existed. Less than half knew the titles of more than two. Almost all of them (156) knew the ALD, 129 owned it, and 125 asserted they used it regularly. Only 60 knew and only 24 owned the LDOCE. (The prevalence of the ALD is due to the fact that it was the only dictionary accepted in the high school final exam in the state in which the two universities are located.)
- The MLDs were used in the following circumstances (in percentages):

	mainly or frequently	occasionally	seldom or never
Translation L2-L1	49	27	16
Essay writing	37	31	19
Translation L <sub>1</sub> -L <sub>2</sub>	38	24	32
Reading	28	36	32
Letter writing	10	29	46

- The students looked for the following information (in percentages):

	very frequently or frequently	occasionally	seldom or never
Meaning	68	21	8
Syntax	61	16	19
Style, register	39	25	31
Pronunciation	31	22	36
Spelling	15	29	38

- More than half of the students did not understand the coded verb patterns that exist in ALD and LDOCE. Those who were familiar with them said they knew them because they had read the introduction (25%), or had received some instruction at the university (45%), or else had been informed about the codes at school (30%). Most of the respondents consulted the codes only occasionally or seldom; 13.75% tried to discover verb patterns in the examples, while 28% looked first at the examples, then at the codes.

### **Kharma (1985)**

Citing Tomaszczyk (1979), Baxter (1980), Béjoint (1981) and Hartmann (1993), and pointing out certain differences and similarities, the author remarks that he wanted to undertake an investigation “in line with the few other similar studies” (p. 86).

His 284 informants were “students of the English Department of Kuwait University (they have had eight years of EFL instruction before joining the department)”. The sample represented the four years of university studies. Students filled in two questionnaires, on the use of BDs and MDs, respectively.

Results:

- All of them owned at least one BD and one MD. Half of them “were using a secondary school or lower level” MD or BD.
- 64% had received some training in the use of MDs, 23% in the use of BDs.
- 95% used the dictionaries, but only 20% did so regularly.
- The MD was used mainly in reading and writing (approximately 80%), and the BD in translation (95%).
- Information sought in both types of dictionary: meaning (99% in both); spelling (MD: 91%; BD: 87%); derivatives (MD: 89%; BD: 72%); synonyms (72% in both); antonyms (58% in both); pronunciation (MD: 64%; BD: 50%); “context/style” (MD: 64%; BD: 60%); grammatical features (MD: 65%; BD: 60%).
- Lexical items most sought in both types: common words, idioms, compound words, phrasal verbs – 95-90%; literary terms (88%); synonyms, antonyms, proper nouns – 79-71%; scientific terms, grammatical words, culture-specific words – 62-60%.
- They “had studied the material in the introduction”: of the MD – 83%; of the BD – 74%.
- Most respondents were, at least occasionally, dissatisfied with: the MD – 90%; the BD – 96%. Major causes: difficulty of the defining vocabulary – 87%; word missing – 84% (MD) / 87% (BD); confusing arrangement of meanings – 80% / 68%; meaning missing – 79% / 77%; lack of example sentences – 73% / 65%; lack of clearness of grammatical labels – 57% / 65%; difficult phonetic transcription – 50% / 55%.
- Suggested improvements: simplification of definitions (76%); an increase in the number of example sentences (71%) and of synonyms and antonyms (59%).

As can be seen in the title of Kharma’s article, the author suggests a new type of learner’s dictionary. In this MD, L1 “equivalents/paraphrases [would be added] to each meaning of the entry in an easily decipherable format” (p. 88).<sup>52</sup>

In addition to the questionnaire, Kharma administered several tests. Please see Kharma (1985), in Section 3.2.

### Rasmussen (1985)

[Information gathered mainly in Ripfel & Wiegand (1988: 502); some facts were found in Bogaards (1988: 133f.) as well.]

The author reports a survey ordered by the (Danish) publishers of the most popular Danish-French/French-Danish BD. They wanted to know the users’ opinions before launching a new edition.

Rasmussen sent questionnaires to 250 teachers (asking them to distribute them among their students) and to 250 other persons (it is not stated how they were chosen). Two hundred eighty were returned. According to Bogaards, 252 were analyzed. In addition, he states that 82.5% of the respondents were Danish and 13.5% French, and that the remaining informants were native speakers of other languages. Ripfel & Wiegand state that apparently most of the respondents were learners, teachers or translators.

All 17 questionnaire items concerned the BD mentioned above.

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<sup>52</sup> This new type would be a “bilingualized” dictionary, or LDT, as I call it, which, at that time, already existed (cf. Hartmann 1994). However, Kharma wanted to include some more improvements.

### Results:

- Most of the informants used the BD during their studies, consulting it mainly in translations. On principle, or because they had had bad experiences, 90% checked the information in other dictionaries, mainly MDs. Apart from a general revision of the BD, they suggested the following improvements: some help for the choosing the right equivalent, and the updating of phraseology and technical terms.

This is one of few surveys which dealt exclusively with BDs. Others are: Hartmann (1982), El-Sakran (1984), Rampillon (1986), Marello (1987), Bishop (1990), Komuro & Yamada (2000), Nishimura (2002), Teixeira (2005). In all types of user studies, BDs have been less investigated than MDs.

### Rampillon (1986)

The author's survey of techniques of foreign language learning contained some questions on the use of English-German/German-English BDs. The informants were 360 German pupils, aged 12 to 16, attending three types of schools. In some cases, Rampillon differentiates among the results of these three groups, but mostly I will omit these distinctions.

### Results:

- 70.8% owned a BD.
- Asked what could be looked up in the BD, the students answered: spelling – 77.2%; pronunciation – 55.2%; meaning – 43.8%; grammatical facts – 30.3%.
- They asserted they actually look up: meaning – 37.7%; spelling – 32.2%; pronunciation – 8.3%.
- Frequency of consultation: sometimes or frequently – 53.8%; seldom or never – 46.2%. (The greatest differences between the three groups occurred in this item: 88.8% of those attending the school whose level is considered the highest of the three – *Gymnasium* – marked “sometimes or frequently”.)

### Coviello (1987)

Having read Galisson (1983), Coviello wanted to undertake a similar study in Italy, using the “questionnaire scheme” of the French researcher. Her informants were 42 students majoring in French at the university of Turin (Torino), half of them in the first year (G1, or group 1), half in the fourth year (G4). She admits at the beginning of her article (p. 110) that this small number does not allow a real “statistical investigation” and asserts that with her survey she wished to stimulate a “more adequate professional conscience” with respect to dictionaries.

Like Galisson, she presents a great number of data, but with considerably fewer explanations (Galisson's article has more than 70 pages, Coviello's only 20).

### Main results.<sup>53</sup>

- All respondents owned an Italian L1D and a dictionary of French.

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<sup>53</sup> Probably because of the small number of informants, Coviello does not indicate percentages; but in order to give a better idea of the results, I calculated the percentages.

- Among the FL dictionaries, the G1 preferred BDs, while the G4 used MDs as well as BDs. Very seldom was a specialized dictionary (e.g. one of synonyms) or a technical dictionary consulted. In both groups, more than half of the students used pocket dictionaries, mainly in journeys to foreign countries or during the reading of newspapers and magazines.
- Types of works considered most important in L1 learning (in decreasing order): G1 – grammar book, dictionary, textbook; G4 – textbook, dictionary, grammar book.
- Types of works considered most important in FL learning (in decreasing order): G1 – grammar book, textbook, dictionary; G4 – textbook, dictionary, grammar book.
- Information sought in the L1D: meaning – 42.9%; meaning nuances – 35.7%; synonyms – 23.8%; neologisms – 21.4%; foreign words – 19%.
- Information sought in the FL dictionary: G1 – meaning (28.6%), spelling (23.8%), equivalent (19%), synonyms (16.7%); G4 – meaning (47.6%), the equivalent of a special sense of an Italian word (40.5%), synonyms (35.7%), spelling (35.7%), neologisms (35.7%), translations (33.3%), and others.
- Reasons for dissatisfaction: insufficient number of examples (57.1%); one does not find the exact word to express some idea (47.6); word missing (28.6%); definitions are too short (19%).
- Causes for not finding the sought information: the dictionary is incomplete (47.6%); it is too old (23.8%) or too general, i.e. words of specialized languages are missing (23.8%).
- Most frequent circumstances of use (or “functions of the dictionary”), in decreasing order: language learning, i.e. acquisition of vocabulary, form, use, and meaning (G1: 28.6; G4: 35.7%), reception (G1: 14.3%; G4: 23.8%), production (G1: 4.8%; G4: 9.5%).

In several items – for example, in the last one – it would have been important to distinguish between BDs and MDs.

### **Herbst & Stein (1987)**

In this article, Herbst & Stein make general remarks on reference skills and the situation of reference skills instruction in Germany. Then they refer to Heath & Herbst's (1985) study and to two other surveys: in one of them the informants were advanced students of English at the University of Hamburg, and in the other one a questionnaire was filled in by 71 first-year students of English at the University of Augsburg and by 60 teachers of English.

Most important general statements:

- When teachers introduce English MLDs, they teach their use in two or three classes. After that, only on a few occasions do they explain something again. The teachers have the impression that the students do not know how to use the dictionaries appropriately. In their opinion, this is not due to failures in the dictionaries, but to the learners' laziness and lack of interest.
- The dictionaries are mostly used in receptive activities.
- The students look more for meaning and for idioms (i.e. probably for the meaning of the idioms) than for information on syntax, and when seeking such information they look more at examples than at verb patterns or other codes.
- Only 70 of the 160 respondents to Heath & Herbst's (1985) survey knew that the MLD they had been using at school contained grammatical information in the form of verb patterns, and only 26 had been instructed on that fact at school.

Because of this lack of knowledge of dictionaries, Herbst & Stein suggest that reference skills be taught systematically at school and at the university.

### **Iqbal (1987)**

[Diab (1990: 47 f.); Zöfgen (1994: 37-58); Dolezal & McCreary (1999: 62); Tono (2001: 43)]

My summary is based on Diab (1990), who provides the largest amount of information on Iqbal's "long and detailed" PhD thesis.

The survey aimed at assessing "Pakistani advanced learners' reference skills and language needs". A 54-item questionnaire (covering 19 pages) was administered to 700 second-year undergraduates from four regions of Pakistan, who "were all studying English as a compulsory subject in the year 1983". Most of the questions concerned four MLDs: LDOCE, CULD (*Chambers Universal Learners' Dictionary*), CELD (*Collins English Learner's Dictionary*), and OALD. Iqbal also interviewed 25 teachers of English.

Results:

- 92.4% of the students owned an MLD, but in general did not know it well.
- OALD was the most popular; less than 10% used CULD or LDOCE.
- More than half of the teachers recommended MLDs. (It is not clear whether this information was obtained from the questionnaire or in the interviews.)
- 66% generally consulted more than one dictionary.
- Many students complained about not having been instructed in the use of MLDs.
- 67% had not been given advice at school on which dictionary to choose.
- Generally the dictionaries were used at home, mainly in receptive activities.
- Information most looked for: meaning and spelling; less than 50% looked up pronunciation or idioms.
- Many students asserted that the definitions were too difficult.

Diab was impressed by Iqbal's methodology, data analysis and large number of respondents. In fact, few surveys have had so many informants and such a detailed questionnaire.

### **Marello (1987)**

[Dolezal & McCreary (1999: 76)]

Dolezal & McCreary provide the following summary:

Marello examines the usefulness of examples in recent Italian-English dictionaries and reports the results of a survey of 42 Italian teachers of English and of 58 Italian university students on their dictionary use. Forty-one of the 58 students were dissatisfied with their bilingual dictionaries because they could not find appropriate translations and because they found that sense discriminations were unclear.

In her book on BDs, Marello (1989: 106 ff.) shows the results of the same survey. Some data on the students' answers follow:

- Types of information most sought: translation (equivalent) – 98%; spelling – 70%.
- Parts of speech most looked up: verbs – 95%; nouns – 93%; adjectives – 78%.
- Types of lexical items looked up: proverbs and sayings – 53%; culture-specific words – 34%; others (common, slang or archaic words, proper nouns) – 13%.
- Most frequent circumstance of use: reading – 84%; L1-L2 translation – 74%; L2-L1 translation – 70%; writing – 68%; listening – 24%; speaking – 10%.
- The main function of the BD is to help in: decoding – 50%; encoding – 21%; vocabulary learning – 47%.

Some of the teachers' answers:

- Practically all the teachers own more than one dictionary.
- 28% use a specific BD because they received it as a gift; only 7 of the 42 teachers chose it on their own.
- 70% of high school teachers and 81% of university teachers recommend the acquisition of a BD.
- Only 17% of all 42 teachers admit that they do not explain the use of BDs.
- 38% have their students use BDs in class (mainly at university) when reading newspapers (which does not happen frequently).
- 67% assign homework for which the use of BDs is necessary.
- Almost all university teachers and 70% of high school teachers use L2 MDs (or MLDs).

### **Snell-Hornby (1987)**

In her article, in which she advocates the development of BLDs, the author briefly mentions a survey conducted at two universities, one in Switzerland and one in Germany. The 35 informants were native speakers of German studying English. Snell-Hornby admits that the “groups were too small to provide more than an indication”. Results (p. 176 f.):

- “[...] nearly all the students use dictionaries practically every day, both monolingual (English) and bilingual, but with only a very hazy idea of their identity [...], and dictionaries available at home were inadequate and outdated [...]”
- “[...] by far the most common motive for using the dictionary was to check *meaning*; next came *correct usage* and *translation*, with *grammar* and *pronunciation* last.”
- “[...] the dictionary was expected to be an inexhaustible fund of information requiring the minimum in cost and effort from the user.”
- “Most students thought a dictionary should include modern technical terms, [American English] and [British English] variants, slang, dialect, phrases and idioms, synonyms and antonyms, as well as encyclopaedic information; it should also make use of colour and at the same time be small and cheap.”

### **Bogaards (1988)**

After providing brief summaries of Tomaszczyk (1979), Baxter (1980), Béjoint (1981), Hartmann (1982/1983), Galisson (1983) and Rasmussen (1985), briefly consolidating the results of these studies and making a few criticisms, this Dutch author reports on an investigation conducted in the Netherlands.

Before doing the main study, he had discussed the questionnaire with colleagues. A first draft was administered to 30 students, then the questionnaire was improved. The final version contained 34 items and an appendix with an “almost exhaustive list of dictionaries nowadays used in the Netherlands” (p. 139). The respondents of this final version were 396 students of French in three Dutch universities (Amsterdam, Leyde, Utrecht). Since 25 of them were not native speakers of Dutch, their questionnaires were disregarded. Thus, the survey is based on the responses of 371 informants, presumably majoring in French. One hundred sixty-five were in their first year (group 1) and 105 in the second (group 2); 101 were more advanced (group 3).

### Summary of the results:

- In a table in which Bogaards lists 23 dictionaries, showing the percentages of ownership of each, preference, regular use and occasional use, the following data stand out: The BD most used regularly was the famous *Van Dale*, and the most used occasionally was a pocket dictionary; among the MDs, *Petit Robert* was most consulted, both regularly and occasionally; it also had the greatest percentage of preference of all the dictionaries, followed by *Van Dale*.
- The second table informs how many students did not own dictionaries: a) no dictionary at all: 3.6% (group 1), 7.6% (group 2), 6.9% (group 3); b) no BD: 5.5% (group 1), 11.4% (group 2), 8.9% (group 3); no MD of French: approximately 22.5% (groups 1 e 2), 16.8% (group 3).<sup>54</sup>
- In the third table, Bogaards presents the data concerning the reasons why the informants would choose an MD or a BD and why they chose *Petit Robert* (PR) and *Van Dale* (VD), i.e. the MD and the BD with the highest preference rates. The most important factors were (in percentages):

	MD	BD	PR	VD
complete information	65	54	26	27
clearness of presentation	42	62	12	20
everyday language	33	41	11	15
many examples	35	28	13	11
clearness of examples	29	25	9	10

- Table 4 shows the frequency of use of MDs and BDs.

	MD	BD
every day	7,3	43,9
every two days	14,4	31,3
at least once per week	38,9	21,6

Without revealing the data, Bogaards states that there are statistically significant differences between the groups: the BD is more used by group 1 than by groups 2 and 3, while the MD is consulted more by group 3 than by groups 2 and 3. However, not only table 4 but also table 5 prove the overwhelming prevalence of the BD.

- Responses about unsuccessful look-ups: the majority of students informed that this did not happen often; when it did happen, it was due to the absence of sense of the sought word (35%) or of the lemma (33%); 69% answered that unsuccessful consultations occurred more in BDs than in MDs; according to 24%, the BD is as reliable as the MD.
- No introduction of any dictionary was read by 42% of the students.
- In table 5, Bogaards presents the data relative to the use of MDs and BDs in various circumstances (in percentages):

		(almost) always	regularly
translation L2-L1	MD	11,8	19,5
	BD	71,1	19,1
translation L <sub>1</sub> -L <sub>2</sub>	MD	15,5	18,3
	BD	74,9	19,4
writing	MD	16,8	28,0
	BD	62,6	26,1
reading	MD	3,8	18,3
	BD	24,9	28,3

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<sup>54</sup> If the respondents really were majoring in French (which is not made explicit by the author, since he only mentions “students of French”), the fact that 6.9% of advanced students (third year or higher) did not own any French dictionary is extraordinary.

- Joint (“simultaneous”) use of MD and BD: regularly, 19% consult first the MD and then the BD, but 66% do it the other way round. That is, for the most part, the students start with the BD, and then consult an MD for verification of the information (37%) or to get a better idea about the looked-up lexical item (28%).

### **Summers (1988)**

In this article about the “role of dictionaries in language learning”, the author reports several studies (cf. 2.1, 4.4.2.2, 5.1.2). Regarding one of them, she states: “In 1980 the Longman ELT Dictionaries Department carried out a Needs Research project into the use made of the *Longman Dictionary of Contemporary English (LDOCE)* by intermediate students in secondary schools and colleges in the UK, Japan, Germany, the USA, Mexico and Nigeria.” (p. 114) Unfortunately, she does not reveal the number of respondents. Results:

- In 60% of consultations, the students wanted to check the meaning; only 15% were interested in spelling.
- Sometimes they looked up information necessary for production activities (examples, spelling, pronunciation, grammar, part of speech).
- Apparently the students used the LDOCE sometimes to increase their vocabulary.
- “In general, words that were looked up were not rare, technical, or ‘hard’ [...]; they were higher frequency words, particularly abstract ones.”

### **Taylor (1988)**

[Thum (2004: 6 f.)]

The author conducted a survey about the use of English dictionaries among 112 Chinese students at the “City Polytechnic of Hong Kong”. Results:

- Only 30% used an MLD; 55% preferred an LDT (or “bilingualised dictionary”). The choice was influenced mainly by the teachers.
- Information most looked for: meaning; least looked for: grammar.
- Main difficulties: “understanding pronunciation symbols, identifying the right meaning of words, and the amount of time used to consult a dictionary”.

### **Battenburg (1989)**

[Battenburg (1991: 88-105); Zöfgen (1994: 52, 54 f.), Dolezal & McCreary (1999: 1), Nesi (2000: 9 f.), Tono (2001: 46 f., 49)]

The following summary is based mainly on Battenburg (1991), a book in which one of the chapters provides many details of the study reported in his doctoral thesis of 1989, and on Nesi (2000: 9 f.).

Battenburg carried out his survey in the US in 1984. Sixty non-native speakers studying at Ohio University filled in a questionnaire similar to those of Tomaszczyk (1979), Baxter (1980) and Béjoint (1981). “Seven language backgrounds were represented, but the majority of subjects were speakers of Arabic or Chinese languages. Battenburg

claimed that there was no evidence to suggest that differences in language background created significant differences in dictionary-using behaviour.” (Nesi)

Based on a test (the *Michigan Test Battery*), the author distinguished three groups of proficiency: elementary (E), intermediate (I) and advanced (A), and broke down the results accordingly.<sup>55</sup>

Results (in percentages):

- Ownership:

Level	BD	MLD (English)	L1D (English)
E	100	50	55
I	90	35	70
A	55	15	100

- In the item on frequency of use, the respondents could choose between “always”, “often”, “sometimes” and “never”. Here I indicate only the sum of “always” and “often”:<sup>56</sup>

Level	BD	MLD (English)	L1D (English)
E	85	85	25
I	40	30	0
A	40	35	55

- In the item on information looked up, I only mention the features with the highest percentages and again I present the sum of “always” and “often”:

Level	Meaning	Synonyms	Spelling	Pronunciation	Derived forms
E	80	85	65	50	70
I	80	50	65	40	30
A	55	30	55	10	25

- Students who had been instructed in dictionary use: E – 50%; I – 75%; A – 50%.
- Respondents who had read or looked at the following outside matter:

Level	Irregular verb forms	Pronunciation guide	“Guide to the Dictionary”	Abbreviations	“Spelling Table”
E	75	25	25	30	25
I	80	75	45	50	80
A	65	70	30	70	50

- In the item “circumstances of use”, I again present the sum of “always” and “often”:

Level	Reading	Writing	Speaking	Listening	Translation L2-L1	Translation L1-L2
E	75	45	10	20	70	25
I	90	60	5	10	65	45
A	25	45	0	0	30	30

- Level of satisfaction with the dictionaries (“always” or “often”): E – 45%; I – 85%; A – 75%.

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<sup>55</sup> Tono states that this was (until 2001) “the only survey-based research which addressed the issue of relationship between different proficiency levels and the use of dictionary information” (p. 47). In fact, MacFarquhar & Richards (1983) had made such a distinction only with respect to preference for certain definition types; Bensoussan, Sim & Weiss (1984) had made some remarks on different attitudes according to proficiency level, and in the EURALEX/AILA Research Project on Dictionary Use (cf. Atkins & Varantola 1998) four proficiency levels were differentiated in the data of some items, e.g. on preferences for MDs or BDs.

<sup>56</sup> The data on group B are suspect: it is improbable that so many students at an “elementary” level use MDs always or often (85%: MLDs; 25%: L1Ds).

- In the item on suggestions for improvements, many students did not express their opinion. Others suggested the inclusion of more examples and of more entries or they wished a “larger and more readable print” or better pictures and diagrams.

Zöfgen, Nesi and Tono make some critical remarks on this survey. For example, Zöfgen (p. 52) laments that in the item on circumstances of use Battenburg did not distinguish BDs from MDs, and Nesi (p. 9 f.) notes that the survey “required a certain amount of recall and retrospection, and used terminology which would be rather obscure to the non-linguist”.

### **Bräunling (1989)**

Many of the studies on dictionary use have dealt with a certain dictionary type, namely English MLDs. Bräunling undertook a survey (the only one in existence) on another type, *viz.* valency dictionaries.

The author and a colleague carried out a comprehensive investigation of the use of valency theory in the teaching of German. They sent a questionnaire to all Goethe Institutes in Europe, asking the teachers to fill it in.<sup>57</sup> One hundred twenty-six questionnaires were returned; of these, 112 were analysed by the researchers. One part of the questionnaire was devoted to the use of German valency dictionaries, of which there were two at that time (Helbig & Schenkel and Engel & Schumacher), apart from a project which was to be published under the title *Verben in Feldern*. I will employ the abbreviations HS, ES e ViF.

Results:

- Teachers who knew of the dictionaries: none – 44.6%; HS – 22%; ES – 15%; HS and ES – 17%; 1.8% – ViF.
- 12.5% used one of the dictionaries in their preparation of classes; 4.5% used one in the classes.
- Approximately 33% explained why they did not use the valency dictionaries in class; some of the reasons were: too expensive; very theoretical; too specialized; too complex; not didactic; the examples do not reflect common use.
- Many teachers wanted valency information to be integrated into general dictionaries (64%), into verb dictionaries (37.5) or into BDs (11.6%).

### **Diab (1989)**

The author presents a brief summary of the research reported in his doctoral thesis, defended in 1989 and published as Diab (1990). Cf. *infra*.

### **Ibrahim & Zalessky (1989)**

Please see this report in Section 2.1.

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<sup>57</sup> Goethe Institutes are cultural centres financed by the German government. They offer language classes and organize cultural events in the whole world, including Germany itself.

## Ripfel (1989)

The aim of this user survey was to obtain information about German dictionaries, with a view to compiling a German MLD. Unlike English, no such dictionary existed as yet for German.

Ripfel recognized that for this purpose, the informants should be non-native speakers of German. But for financial and organizational reasons it was not possible to conduct a survey abroad, and the foreigners who were studying at the University of Heidelberg, where the author worked, formed a too heterogeneous group, with different language backgrounds and proficiency levels.

Thus, Ripfel resigned herself to recruiting as informants Germans who were studying French or English at her university. It is obvious that such respondents were not suitable for the declared purpose, but at least the survey was to be one more study on dictionary use. Zöfgen (1994: 43) considers it exemplary, probably due to the precision of the questions, the homogeneity of the four groups of informants and the fact that response to the questionnaires was supervised by the researcher assistants, who were able to explain the questions when necessary. Another positive fact is that Ripfel had done a pilot study, after which the questionnaire was improved.

The informants were advanced students of one of two types of courses of study: Languages (French: 104, English: 96) or Translation (French: 43, English: 36). Thus the FL of 147 students was French; for 132, it was English.

The questionnaire contained 34 items; in most of them, the informants had to choose among alternatives, although some of the questions were open-ended.

Main results (in most cases I have rounded the percentages):

- Ownership of dictionaries: 1 BD – 69%; more than 1 – 28%; 1 MD – 60%, more than 1 – 40% (of these, 61% were students of Translation and 37% of Languages).
- Reasons for purchase: recommendation of the school or university – 83%; permission to use the dictionary in exams – 50%; the dictionary was considered good – 42%. (Other reasons had percentages below 7.)
- Opinions about the most important materials in FL learning: for beginners, the respondents indicated in decreasing order: textbook, grammar book, BD, MD; for advanced learners: MD, BD, grammar book, textbook.
- In the item on the deficiencies of MDs, 42.65% of the respondents had no complaints (which is surprising); among the remaining 57.35%, the main deficiencies mentioned were:

Students of Translation		Students of Languages	
Too few examples	60%	Too few examples	31%
Insufficient indication of register	17%	Lack of clearness	12%
Unsatisfactory updating	16%	Too few colloquial words and expressions	6%
Lack of clearness	10%	Insufficient indication of register	5%
Too few colloquial words and expressions	8%	Lack of indication of words of the same family	4%

- What is more important in an MD? More entries or more clearness and fewer entries? – 73.48% opted for the first alternative.

- What kind of information is superfluous? – 90% answered that none is unnecessary (although several types are not sought at all).
- Knowledge about the dictionary: a) 76% would only read the introduction when some information was unclear; 18% had read it; 5% had never read the introduction; b) 56% had received some information at school or university about the structure and use of dictionaries; 43% had not been instructed at all.
- About consultations: a) in long and confusing entries, 58% do not desist, but they do find the consultation troublesome; 22% desist; 12% do not bother at all; b) as to the manner of consultation, 77% go immediately to the information looked for; 17% read the whole entry.
- Circumstances, or tasks, in which the MD or the BD is used (in percentages relative to those who indicated the circumstances):

	MD	BD
Translation L1-L2	89.61	89.61
Translation L2-L1	89.25	75.27
Reading	63.08	72.40
Writing	84.23	72.04
Conversation	20.07	40.80
Vocabulary learning	24.37	36.56

- In another item, respondents had to indicate in which circumstances they considered the MD or the BD more important. The percentages, relative to all students, show that the BD was considered more important only in conversation and vocabulary learning:<sup>58</sup>

	MD	BD
Translation L2-L1	68.46	27.60
Translation L1-L2	54.12	43.37
Reading	50.90	38.35
Conversation	26.52	53.05
Writing	58.78	25.81
Vocabulary learning	23.66	51.61

- With respect to the types of information most looked for, the author does not present percentages; but the following are the figures of classification (“1” being the highest value and the higher figures indicating decreasing importance): meaning (1.36), examples (1.89), spelling (3.31), grammar (3.82), pronunciation (4.83), etymology (5.12).

In her conclusion, Ripfel admits that the results cannot be generalized, but she believes that other surveys with students of FL in German universities probably would result in similar findings.

Of course it would have been interesting if she had broken down the data on all four groups by item.

### **Tickoo (1989)**

[Dolezal & McCreary (1999: 112)]

Following a lengthy review of the beneficial features of monolingual English learners' dictionaries, Tickoo reports the results of a survey of one hundred English teachers in India and Singapore on their preferences re [sic] the three dictionaries, OALD, LDOCE, and COBUILD. He found that the teachers preferred the definitions, explanations, and example sentences in

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<sup>58</sup> Curiously, Ripfel does not wonder why and how the MD can be preferred in translations.

COBUILD. A second survey of sixty undergraduate students in Singapore revealed that the “vast majority... understand very little of what dictionaries now provide...” (Dolezal & McCreary 1999: 112).

### **Atkins & Knowles (1990)**

In this article, the authors publish the first results of the study reported more fully by Atkins & Varantola (1998). Cf. *infra*.

### **Diab (1990)**

As a teacher of ESP in a Jordanian university, the author “decided to devote this study to an ESP context within an Arab university situation” (p. 53). He asserts that the “subjects involved in my research are the total population of student nurses at the University of Jordan of all levels, i.e. years 1-4, which is 500, the total of the nursing staff (N=30), and the total population of the ESP instructors (N=8) of the Language Centre” (p. 55), however, in the end, only 405 students participated, because of “snowy weather” (p. 69).

Diab designed two questionnaires, one for the students and one for the staff. The first one was written in modern Arabic, the second in English. The researcher made several pilot studies and improved the questionnaires. The final versions were filled in by 405 students individually during their classes and by 24 instructors at home. The students had 25 minutes at their disposal and “were invited to ask the researcher in case any point of clarification arose” (p. 68).

Diab also made structured interviews with 41 seniors selected at random, and with 6 of the 8 ESP teachers. The questions were very similar to those of the questionnaires. “The purpose of these interviews was to supplement and further enhance the reliability of the questionnaire findings.” (p. 70).<sup>59</sup>

The third method adopted by the researcher “follows the ‘protocol’ principle” (p. 65). He distributed copies of “Dictionary Using Diaries” to his first-year class. These “diaries” were “small form-like slips of paper which students were asked to keep in their dictionaries and to fill in one every time a dictionary was referred to” (p. 64). Thirteen students returned their diaries. The author considered the findings “interesting and useful”.

Diab presents the results of the questionnaires in detail in 15 tables, mostly breaking the data down by year of study. These details may be interesting for the specific ESP course, but probably not for the readers of this book. Therefore, I summarize only a few general results, in terms of averages.

- Strategies employed when there are doubts about lexical items or dictionary use:  
Guessing from context – 95.5%; asking fellow students about meaning – 93.0%; glossing in text – 92.6%; asking Nursing staff about meaning – 90.8%; asking ESP staff about meaning – 87.4%; asking fellow students about pronunciation – 87.4%; looking up all items in reading – 85.1%; asking ESP staff about pronunciation – 83.7%; asking Nursing staff about pronunciation – 79.0%; browsing through dictionary pages – 78.5%; consulting textbook glossaries – 77.7%; looking up the same item in more than one dictionary – 53.0%; asking ESP staff about type of

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<sup>59</sup> Zöfgen (1994: 45) remarks that to his knowledge this is the only study in which interviews were done with a “large number of subjects”.

- dictionary – 52.6%; using dictionaries in university library – 52.6%; consulting dictionary front matter – 51.3%; asking fellow students about type of dictionary – 51.1%; asking ESP staff about symbols in dictionaries – 49.6%; asking fellow students about symbols in dictionaries – 47.9%; etc.
- Circumstances of use in which the students most need help (Diab distinguished “little”, “average” and “much” need for help and added up the number of students who chose one of the three possibilities, but I will present only the data referring to “much need for help”):  
Practising speaking on Nursing topics – 66.3%; speaking in lectures – 56.9%; practice in common Nursing abbreviations – 55.4%; writing research essays – 54.7%; practising writing on Nursing topics – 54.1; understanding oral exam questions – 53.0%; answering oral exam questions – 52.9%; practising listening comprehension on Nursing topics – 52.6%; speaking in seminars – 51.2%; etc.
  - Attitudes (I omit the data which do not refer to dictionaries and indicate the percentages of respondents who agreed with the following statements):  
“Every nursing student should have at least one dictionary” – 90.1%; “It is important for nursing students to use dictionaries in their university study” – 89.3%; “It is important for nursing students to use a medical/nursing dictionary in their university study” – 86.4%; “It would be better if the present English language courses include exercises on English-English dictionaries and how to use them” – 79.7%; “*Al-Mawrid* is the most useful English-Arabic dictionary for nursing students” – 64.4%; “Nursing students need to refer to a dictionary when they write in English” – 63.9%; “To depend on one dictionary is not enough” – 55.0%; “English-English dictionaries are more useful to nursing students than English-Arabic dictionaries” – 51.6%; “Nursing students should be allowed to use dictionaries during nursing exams” – 46.9%; “In general, dictionary using is boring” – 45.4%; “Nursing students should be allowed to use dictionaries during English language exams” – 40.5%; “Nursing students can understand the content of their assigned textbook without reference to a dictionary” – 26.9%; “Nursing students should avoid using pocket dictionaries in their university study” – 15.8%; “The present English language courses provide sufficient information on dictionaries and how to use them” – 13.8%.

### **El-Badry (1990)**

[Diab (1990: 50); Dolezal & McCreary (1999: 32)]

In this doctoral thesis, the author reports a study in which she intended to investigate the use of English-Arabic BDs in particular, and also of English MLDs. She sent a 30-item questionnaire “to 950 potential users at universities and research centres mainly in Egypt and the U.K” (Diab). According to Dolezal & McCreary, 493 questionnaires were returned, but Diab asserts that the subjects were “135 undergraduate students, 242 postgraduate students, and 121 people whose work is of an academic nature”, i.e. 498 on the whole. Half of the respondents were residing in Arab countries, mainly Egypt, while the other half were living in the UK. Results:

- 95% of the informants indicated that they needed to use dictionaries.
- English-Arabic BDs were used more than English MLDs or Arabic-English BDs.
- 55% usually consulted the English-Arabic BD *Al-Mawrid*, 24% the OALD.
- Information most looked for: meaning, spelling, synonyms, usage, and pronunciation.
- Major deficiencies of the English-Arabic BDs and of English MLDs: ambiguous definitions, insufficient number of examples, lack of information about usage.
- Major deficiencies of the Arabic-English BDs and of Arabic MLDs: “obsolescence of the Arabic vocabulary”, “lack of modern vocabulary, especially technical”, and “poorly arranged entries, making information difficult to find” (Dolezal & McCreary).

### Krantz (1991)

On pages 19 and 20 of her book (cf. 4.4), the author reports on a small survey, conducted between 1982 and 1985, about dictionary use. Her 106 Swedish informants were majoring in English. Results:

- Purchase and ownership: 13% bought their first dictionary when they were studying at university; 96% owned an English-Swedish BD, 79% an English MD.
- Frequency of use: at least once a day – 12%; several times per week – 65%.
- Type preferred: BD – 77%.
- “Kinds of units looked up”:

	Individual words	Phrases	Abbreviations
Often	68%	11%	3%
Sometimes	32%	52%	31%
Rarely	0%	37%	63%

- Types of words looked up:

	Slang	Common words	Structural words
Often	6%	55%	18%
Sometimes	30%	39%	45%
Rarely	64%	6%	37%

### Leffa (1991)

This Brazilian author carried out an investigation on the effects of an “electronic dictionary” or, more exactly, of electronic glosses (cf. 6.2). He also conducted a survey of students’ attitudes towards this “electronic dictionary”. In Leffa (1993), an English version of his report, he describes the survey in the following way (p. 26 f.):

[...] the subjects were undergraduate students from the Mathematics Department enrolled in two ESP courses. The activities with the Electronic Glossary were part of the curriculum proposed for the students, allowing more extensive use of the Glossary.

Each student was given a floppy disk with the program and five texts of about 2,000 words each to be read in the computer with help of the Electronic Glossary. The activity was conducted individually, when and where would be convenient for the student. The only control was a worksheet with comprehension questions that should be answered by the students after reading each one of the texts. The worksheets were collected weekly by the teacher.

On the sixth week, after the last worksheet was collected, 51 of the 55 students who took part in the activities answered an opinion questionnaire. The responses were very positive and could be summarized as follows:

Forty-two of the 51 subjects answered that the activities with the electronic dictionary should be repeated in the following semester, 49 described the activity as interesting and 41 thought that the electronic dictionary was more helpful than the traditional one. When asked to write a positive and a negative aspect, the students produced 54 positive and 30 negative. Among the positive aspects they emphasized the speed and ease with which they could get the meaning of words, [...]. [...] The negative aspects were mainly mentioned for reasons that were not related to the experience [such as the difficulty of getting access to a computer].

### **Rashed (1991)**

[Diab & Hamdan (1999: 286)]

Diab & Hamdan provide only the following information:

[Rashed] analysed the attitudes of Jordanian university students towards dictionaries and their uses. The results showed that the majority of the students held positive attitudes towards dictionary use and that these attitudes varied according to the students' level of study, and the type of academic discipline they were engaged in.

### **Al-Ajmi (1992)<sup>60</sup>**

In his PhD thesis on dictionary use, the researcher employed two methods, a questionnaire survey and tests.

The 50-item questionnaire was filled in by 320 Kuwait University undergraduates, 240 from the English Department at the Faculty of Arts (group 1, G1) and 80 from the Faculty of Science (G2).

Results:

- Dictionary ownership: English-Arabic BDs – 95.4% (G1) / 97.5% (G2); English MDs – 91.7% (G1) / 37.5% (G2).
- Favourite dictionary type: BD – majority in both groups; MD – advanced English majors.
- Information sought or purpose of use:
  - L2-L1 BDs: meaning (97.4% in G1, 98.7% in G2), followed at some distance by spelling.
  - MLDs: writing (68.8% in G1, 47.1% in G2); L2-L1 translation (half of English majors).

The tasks in the tests were an L2-L1 and an L1-L2 translation. The author describes the results as follows:<sup>61</sup>

[...] the combined use of a bilingual dictionary and an EFL dictionary was more effective than the use of the bilingual alone. Some of the translation errors were apparently due to the students' inadequate reference skills and L2 proficiency level rather than to the dictionary itself. It was also found that students with a background in dictionary training were better able to avoid the problematic spots in the design features of their bilingual dictionaries and follow strategies for solving word problems when enough help is provided by the dictionary.

### **Andrade (1992)**

The author mentions a study which was being conducted among approximately 200 Brazilian students attending an ESP course in the last year of high school. She used several methods to investigate "the role of the dictionary in an ESP course": interviews, questionnaires, diaries, and tape-recording of classes. In her English abstract, she remarks that "in spite of being considered a 'familiar' reference source [by the teachers], the

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<sup>60</sup> My description is based on the short summary the author sent me.

<sup>61</sup> Studies in which tests were administered are summarized in other chapters, but I include this one here because of lack of more information.

dictionary is often misused. Students ignore its basic structure and its potentialities to help the reader”. On the other hand, teachers expect students to have learned reference skills in some stage of their studies. These are preliminary results; it seems that Andrade did not pursue her investigation, since I could not find any information about its conclusion.

### **Tinnefeld (1992)**

The respondents of the survey reported by this German author were 25 university students (“experimental group” - EG) and 25 adults attending language courses (“control group” - CG), all of them Germans studying English in Germany. As can be seen, Tinnefeld wanted to get information not only about dictionary use in general, but also about the differences between the two groups, being interested especially in the behaviour of the university students.

Most items in the questionnaire were open-ended.

Some of the general results:

- Ownership of dictionaries of English (apparently BDs or MDs):
  - 1 dictionary – 16%; 2 dictionaries – 28%; 3 dictionaries – 24%.
  - A well-known BD (“Langenscheidt”): EG – 60%; CG – 52%.
  - OALD: EG – 52%; CG – 32%.
- Frequency of look-ups:  
Several times a day: EG – 20% / CG – 8%; once a day: 4% / 12%; three times per week: 16% / 24%; twice a week: 20% / 12%.
- Circumstances of use:
  - Reading: EG – 24.6% / CG – 3.2%.
  - Translation: EG – 19.7% / CG – 6.3%.
  - Checking of words, especially of spelling: EG – 10.5% / CG – 19%.
  - Writing: EG – 6.6% / CG – 6.3%.

Tinnefeld had distinguished five types or manners of consultations (“direct”, “indirect”, “associative”, “creative”, “disambiguating”). Giving an example of situations in which one of the last four types occurs (the “direct” referring to the simple fact that one looks up the item wanted), he asked the subjects how they would proceed in each case. I prefer to omit the results.

In addition to the very small number of respondents, the researcher may be criticised for not revealing or distinguishing their proficiency. He only indicates how long the two groups had been studying English on average: EG – 12.9 years, CG – 10.1 years.

### **Varantola (1992)**

[Dolezal & McCreary (1999: 117)]

In this article, in which Varantola deals with the problems of technical translation and the insufficient coverage of technical terms in dictionaries, she also reports “a survey of fourteen translators’ expectations of what technical terms they expect to find in a dictionary” (Dolezal & McCreary 1999: 117).

### **Frolova (1993)**

[Celce-Murcia & Olshtain (2000: 91 f.)]

The author carried out a survey of the use of BDs and MDs among 26 Russians studying English and 21 Americans studying Russian. All of them were advanced university students.

Results:

- All respondents used several BDs and MDs. The BDs were used in the initial stages, and were even preferred by the majority of advanced learners. Especially in writing, consultations began in the BD, then the students turned to MDs to get more information.
- The Russians consulted English MDs more often than the Americans used Russian MDs. Frolova believes that this is due to the fact that the Russian MDs are very big and consist of more than one volume, whereas there are good English MDs in one volume.
- All students had similar complaints about the dictionaries: unsatisfactory treatment of idioms, inadequate definitions, lack of information on collocations, lack of authentic examples showing common usage.

### **McCorduck (1993)**

One part of this author's doctoral thesis, published in book form, is a survey which can be summarized as follows:

Non-native speakers of English attending ESL courses in the USA were asked to fill out a questionnaire divided into two sections. The first section contained mainly items about dictionary use. In the second, the author wanted to discover whether the students understood the grammatical information provided in certain MLDs.<sup>62</sup> Forty-six filled in the first section, 41 the second.

Main results from the first section:

- 87% of respondents used BDs (some of them only sometimes or seldom), and 87% consulted MDs (some of them only sometimes).
- Among the MDs, many students cited not only MLDs, but also L1Ds.
- 90% used the dictionaries in writing or speaking, 84.8% in reading or listening. (Unfortunately the author does not distinguish MDs from BDs.)

In the second part, there were four items. In each of them a situation of use was described, and the students were asked to mark three or four sentences as "correct" or "not correct". The answers were to be given on the basis of certain grammatical information which the author had taken from MLDs and conveyed to the students. Since these are specific points of English grammar, I will not go into detail here. Just one example: in one case the question was whether the respondents would interpret the abbreviation "Pres", which signifying "present tense", as referring to "simple present tense" only, or also to "present progressive". Since some students marked an incorrect sentence as correct.

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<sup>62</sup> Probably because his informants were ESL students, McCorduck employed the term "*ESL dictionaries*", although the dictionaries mentioned are generally called *learners' dictionaries* (or monolingual learners' dictionaries, MLDs), sometimes *EFL dictionaries*.

McCorduck remarks (p. 140) that in the dictionary a specification was lacking (i.e. it would have been necessary to indicate that “Pres” means only “simple present”).

In the conclusions of this part of the study, the author states: “For all of the questions in each of the four items [...], a majority of students gave the expected correct response to the questions based upon the information given in the items.” However, “in some cases learners can almost mechanically be led to produce ungrammatical sentences based on inaccurate or ambiguous grammatical information in dictionaries” (p. 148).

It should be mentioned that some of the correct answers may have been given not owing to indications provided by the dictionary, but because the students already knew the grammatical construction, since more than half of them had been studying English for more than six years, and all of them were living in the USA.

### **Blok (1994)**

[Dolezal & McCreary (1999: 15)]

Please see subchapter 2.1.

### **Houtman & Wouters (1994)**

[Dolezal & McCreary (1999: 57)]

Houtman and Wouters interviewed and tested Dutch high school students on their dictionary use as a language learning aid. They found that the students were generally ignorant about the dictionary as a language learning source and were very poor at using dictionaries to get information. (Dolezal & McCreary)

### **Rehail (1994)**

The informants of this survey were 108 Jordanian third and fourth year students of a B.A. course in French.

Results:

- Dictionary ownership: BD – 100%; MD – 75.9%; on average they owned 3.1 dictionaries.
- Opinions on information provided by the dictionaries:
  - For comprehension
    - BDs: very sufficient – 23.1%; sufficient – 12.9%; insufficient – 2.7%
    - MDs: very sufficient – 84.2%; sufficient – 59.2%; insufficient – 21.2%
  - For production
    - BDs: very sufficient – 12.9%; sufficient – 44.4%; insufficient – 42.5%
    - MDs: very sufficient – 58.3%; sufficient – 42.5%; insufficient – 8.3%
  - For vocabulary learning
    - BDs: very sufficient – 24%; sufficient – 56.4%; insufficient – 19.4%
    - MDs: very sufficient – 87%; sufficient – 11.1%; insufficient – 1.8%
- Dictionaries used in translation
  - BDs: very frequently – 75.9%; frequently – 24%
  - MDs: very frequently – 23.1%; frequently – 29.7%; seldom – 47.2%
- The same information is sought in several dictionaries: very frequently – 16.6%; frequently – 60.1%; seldom – 23.1%
- Opinions on the usefulness of dictionaries for learning French well:

- BDs: very useful – 78.7%; useful – 21.2%
- MDs: very useful – 89.8%; useful – 10.1%

### **Taylor & Chan (1994)**

After describing the characteristics of English and Chinese pocket electronic dictionaries (PEDs), the authors report a survey among “494 students in graduate, undergraduate, and sub-degree courses in the City Polytechnic of Hong Kong” (p. 599). The questionnaire, designed “after administering a pilot questionnaire and interviewing several students” (*ibid.*), contained 16 items.

Main results (p. 601 ff.):

- On average, 18% of the students used PEDs. The percentages varied between 12% in business courses and 29% in a course in applied linguistics. Those who did not use PEDs indicated as main reasons “that they are not considered as good as printed dictionaries (43%) and that they cost too much (35%)”.
- Information looked for: meaning, “nearly always by reference to a Chinese equivalent” (most of the PEDs were BDs of English and Chinese) – 100%; spelling – 60%; Chinese equivalent (44%) or English equivalent (34%);<sup>63</sup> parts of speech – 30%; synonyms – 27%; antonyms – 22%; simplified form of Chinese characters.
- Frequency of use: once a day – 22%; at least once a week – 44%; less than once a week – 33%; more than printed dictionaries – 28%; less – 46%; “use the two types about the same amount” – 26%.
- Advantages indicated by the majority: “convenience, including portability, and ease of use, with 53% also selecting the provision of speech”.
- Main disadvantages: “brevity of the equivalents, their inaccuracy, and the limited number of headwords”; also “of some concern was the absence of examples or the unsatisfactory quality of those that were provided, as well as poor sound quality, breakdowns, and the cost of purchase”.

Taylor & Chan also interviewed 12 teachers. “Only four had actually used a PED themselves”, most of them “were rather doubtful about PEDs and all would prefer their students to use printed dictionaries”, but some “felt that these dictionaries might help to increase motivation, which is a problem in teaching and learning English in Hong Kong” (p. 603).

### **Amaral (1995)**

Part of this doctoral thesis about BDs of Portuguese and Spanish is the report on a survey of dictionary use. The informants were 20 Brazilians majoring in Spanish in a Brazilian university. They were in their first, third, fifth or seventh semester. Since among the first-year students some were beginners, having been studying Spanish for only two months, while the most advanced had been studying for nine years, the proficiency level of these respondents varied enormously. The questionnaire contained 19 items. As the results were based on the answers to very few students, I present only a sample here.

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<sup>63</sup> Apparently, after having answered that they looked for meaning (100%), they stated in which language they sought the meaning, or else they distinguished between *meaning* and *equivalent*. Anyway, the percentages (44 and 34) do not sum up to 100. Perhaps 22% sought the meaning in monolingual dictionaries.

- Most used learning material: the dictionary was in second place, behind the material selected by the teacher.
- Preference for BDs or MDs: low-level students preferred BDs; from the fifth semester on, there was a slight prevalence of MDs; practically all those in their seventh semester preferred MDs.
- Frequency of use: once a week – 55% (i.e. 11 students); almost daily – 45%.
- Main reasons for consultations: finding out the meaning of a word – 80%; finding out whether certain word exists – 75%; looking up spelling – 65%; looking up equivalent in Portuguese or in Spanish – 55%; “confirming in the MD whether the sense provided by the BD is the one that was looked for, and increasing vocabulary” – 40%.
- All 20 students asserted that when they don’t know the meaning of a word they consult a dictionary; some of them would ask the teacher, but if they cannot find him or her, they turn to the dictionary.
- Circumstance of use of BDs: writing – 90%; reading – 25%.<sup>64</sup>
- Instruction in dictionary use: it is necessary – 85%; 40% said they had learned dictionary use (of BDs) alone; 35% had been taught how by school or university teachers.

### Schafroth (1995)

In this article, the author compares four French MLDs, but also reports on a survey he had conducted between 1989 and 1990 on the use of French dictionaries (p. 116-118).

The respondents were 114 German freshman and sophomore French majors. Schafroth asserts that he had also 17 juniors and seniors as informants, but he shows only one result for this second group. Thus, the results summarized below refer to the 114 students in the first group, with just one reference to the other 17.

- Knowledge of French MDs: 93% of the respondents were familiar with the *Micro Robert*; 25% of the first-year students and 59% of the sophomores knew the name of the *Petit Robert*.
- Ownership of French MDs: *Micro Robert* – 79%; *Petit Robert* – 9%.
- Frequency of use: just over half of the 114 students (main group), but 75% of the second group, consulted the *Micro Robert* regularly; 56% of the first group preferred BDs.
- Reasons for preference of BDs: the BD is simpler and more comprehensible – 60%; the desired information is found more easily – 34%.
- Evaluation of the *Micro Robert* (which 79% owned and 86% had already used at school): only 37.7% liked it; half of these students said they liked it simply because they did not know any other dictionary of the same kind; the other half found the definitions quite comprehensible and the layout quite clear.
- Reading of the introduction to the MD: superficially – 31%; relatively well; thoroughly – 4%.
- Circumstances of use of MDs (in decreasing order): translation L2-L1; translation L1-L2; writing.<sup>65</sup>

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<sup>64</sup> It should be explained that the Portuguese and Spanish vocabularies are very similar, so that in receptive activities the dictionary is less important. However, there is a contradiction between the scant importance of BDs in reading (25%) and the fact that looking up meaning is the main reason for consultation (80%).

<sup>65</sup> Although “reading” is, surprisingly, not mentioned, Schafroth remarks that the MD is used “not only” in decoding (or receptive) activities, but also for encoding. It is true that translation into the L1 is mostly considered a decoding or receptive activity.

### **Abu-Samak (1996)<sup>66</sup>**

[Diab & Hamdan (1999: 286)]

Diab & Hamdan provide only the following information:

Abu-Samak (1996) investigated dictionary use and methods of teaching lexicographical materials in Jordanian school ELT curricula. Most teachers of English were found to be dictionary users; however, they tended to use bilingual dictionaries more frequently than monolingual ones. A wide range of teaching strategies were found to be used by the teachers concerning dictionary work in textbooks, but it was clear that they did not receive consistent guidance as to how dictionary materials should be taught.

### **Mdee (1997)**

Carrying out a survey, the author wanted to compare the use of BDs by two groups of university students, one in England, the other in Tanzania. In England, the 56 respondents were native speakers of English studying German (16) or French (40) at the University of York (group 1, G1); in Tanzania, 14 native speakers of Swahili were studying French at the University of Dar es-Salaam (G2). Mdee does not reveal how he selected the informants, nor their proficiency level. Results:

- BDs used: in G1, 100% of the students of German and 85% of those studying French used BDs published by Collins; in G2, 71% used French-English BDs of the same publishing house, 36% used a French-Swahili BD.
- Had been taught how to look up a word or an idiom in BDs? – 73% of G1: no; 74% of G2: yes.
- Had received instruction on how to interpret abbreviations like *n* or *vt* and what suffixes like *ness* represent? – 85% of G1: no; 57% of G2: yes.
- Reading of the introduction to the BD: 89% of G1 – only when they did not understand some symbol; 71% of G2 – before the first consultation.
- Circumstances of use (the percentages for the two groups are separated by slashes: writing – 96% / 93%; reading – 88% / 79%; speaking – 30% / 0%; listening – 23% / 0%).
- Information looked up frequently: meaning or lexical equivalent – 98% / 79%; gender – 80% / 79%; spelling – 69% / 93%.
- “Less frequently sought information which recorded high scores”: in G1 – “collocations, stylistic labels, comparative and superlative forms of adjectives, irregular forms of lexemes, example sentences and pronunciation, in that order”; <sup>67</sup> in G2 – pronunciation, examples, conjugation, “collocation of lexical items”.
- Opinions and suggestions:
  - The explanations given in the introduction are clear and helpful: 71% / 93%.
  - The information given in the entries should be clear: 88% / 64%.
  - Information which is lacking in their BDs and should be included:
    - G1: a “sketch grammar of the target language” – 50%; idioms – 46%; verb conjugations – 45%; usage notes – 42%; verb tenses – 41%;
    - G2: usage notes – 86%; verb conjugations – 71%; idioms – 64%; verb tenses – 57%; pronunciation – 43%.

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<sup>66</sup> Bibliographical data according to Diab & Hamdan: Abu-Samak, Z. 1996. *A Study of the Teaching Practices in Teaching Dictionary Exercises Used by Teachers of English in the Basic Stage in Amman Government Schools*. MEd Dissertation, University of Jordan.

<sup>67</sup> In the discussion of results, Mdee asserts that in G1 the example sentences were “in the third position as one of the most frequently sought types of lexicographical information”.

Mdee also claims that “[t]hree categories of words, verb, noun and adjective, which usually have irregular forms, collocate with other words or have special characteristics, were tested to determine the type of information looked up in each of these categories”, but he does not explain how this test was carried out.<sup>68</sup>

### **Schmitt et al. (1997)<sup>69</sup>**

[Coura Sobrinho (1998: 64)]

The authors were interested in FL learning strategies. Since one of these strategies is dictionary use, it appears in their study, about which Coura Sobrinho writes:

[...] Schmitt et al. (1997) undertook a survey among learners of English of different nationalities with the intent to discover which learning strategies they consider helpful.<sup>70</sup> [...] The use of dictionaries (bilingual and monolingual) was among the 16 strategies considered the most efficient by the students; the use of BDs occupied the first position (93% of all respondents), and the use of MDs the fourteenth (73%). The researchers noticed that beginners prefer BDs, while 100% of PhD students prefer MDs. [...].

### **Zacarias (1997)**

The major part of this master’s dissertation is a report on the author’s investigation into the use of BDs and MDs by Brazilians when decoding and encoding English texts. Her subjects were 4 groups of students, totalling 29.

The first group (6 subjects), who had been studying English for at least six years, read a text (being allowed to use a dictionary), talked about the content and wrote one paragraph about it.

The remaining three groups (of 5, 8 and 10 subjects respectively) had been studying English for 3 to 12 years. For them, Zacarias organized activities during which the following was done: the students read texts (also being allowed to use dictionaries), discussed the content and wrote a composition; in this composition, the teacher marked the errors and asked the students to correct them with the help of dictionaries.

In the last two groups (of the four), the subjects, after having corrected the composition, did exercises based on the *Oxford Learner’s Dictionary Worksheet*, in order to improve their reference skills; then the same activities as before were done again (i.e. reading a text, discussion, writing a short composition about the topic, marking of errors by the teacher and their correction by the students – who could consult dictionaries).

To all groups the author administered a questionnaire, but she also did interviews. The last two groups filled in a questionnaire on reference skills before and after the exercises.

General results:

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<sup>68</sup> I thank the author for having sent me the text of his article by email.

<sup>69</sup> Bibliographical data provided by Coura Sobrinho: SCHMITT, N. et al. Vocabulary Learning Strategies: Student Perspectives and Cultural Considerations. *Independence*, 4-6, Spring 1997.

Kobayashi (2006) cites the study as follows: Schmitt, N. (1997). Vocabulary learning strategies. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary description, acquisition and pedagogy* (pp. 199-227). Cambridge: Cambridge University Press.

<sup>70</sup> Coura Sobrinho (2000: 77) states that 687 learners filled in the questionnaire.

- Although the majority had been studying English for more than six years (and some of them were already teachers of English), 83% used BDs, and only 17%, MDs. Most BDs were pocket dictionaries.
- 67% indicated that they understood the dictionary information partially, 25% totally, and 8% not at all (which is surprising, even though these students were undoubtedly referring to MDs).
- Opinions about dictionary information: it is complex – 55%; excellent – 36%; weak – 9%.
- Frequency of use: often – 55%; sometimes – 41%; seldom – 3%.
- Information most sought: equivalent (or “translation”) – 33%; spelling – 23%; pronunciation – 15%; synonyms – 11%; grammar – 9%; usage – 9 %.
- Had received instruction on the content of dictionaries: never – 72%; seldom – 24%; always – 3%.

The activities the subjects had to carry out certainly do contribute to good investigation. Unfortunately, in the results of her study, Zacarias does not distinguish levels of proficiency nor the difference between BDs and MDs, or between decoding and encoding; and, of course, the small number of participants does not allow any generalization. But, like many surveys with few participants, the study is interesting in that it confirms the results of others.

### **Atkins & Varantola (1998)**

This is the “final report” of the so-called “EURALEX /AILA Research Project on Dictionary Use”, the broadest investigation into dictionary use undertaken so far. An “interim report” was published by Atkins & Knowles (1990), and the long history of the project is summarized in the fifth appendix of the article. Since the study consists of several parts, in which different methods were used, I deal with it in two chapters, i.e. here (a survey) and in 3.2 (on *actual* use).

About the “scope” of the investigation, Atkins & Varantola explain (p. 22):

It had originally been intended to study dictionary use over a number of different types of dictionaries, including those designed for native speakers of the various languages, but practical considerations restricted the research to the learning of English as a foreign language (EFL) by students of four language groups: French, German, Italian and Spanish. Within these limitations, however, we tried to cast our net as widely as possible, and the students who did the tests came from secondary schools, colleges, universities and adult education classes. 1600 sets of papers were distributed (400 in each language), and 1140 responses were eventually received.

However, since 297 responses had come from a control group and since it became clear that these responses would distort the results, they were removed, as well as all those in which the three parts (Dictionary User Profile Form, Placement Test and Dictionary Research Test) were not complete. This left a dataset of 723 respondents. All data were put into an electronic database so that many results concerning each of the groups could be obtained.

As to the Placement Test,

[it] consisted of 100 questions in English, mainly multiple-choice; it had to be completed in English, within one hour, supervised by the class teacher. The test was manually corrected and one of the following grades were allocated to each student:

- **A:** 81-100% correct answers;
- **B:** 66-80% correct answers;
- **C:** 51-65% correct answers;
- **D:** 0-50% correct answers.

(Atkins & Varantola ibid: 23)

The “[d]istribution of grades across respondents” was the following (in absolute numbers): A – 131; B – 216; C – 195; D – 181. (p. 24)

In the instrument of the questionnaire survey, i.e. the User Profile Form, written in the respondent’s native language, there were some items (e.g. nationality, institution where English was learned, aim of English studies) which I will omit, indicating only the main results concerning dictionary use. The numbers are the percentages of the students of the respective group.

- Preference for MD or BD (p. 42):  
Would often use an MD:           A: 29; B: 29; C: 17; D: 15.  
Would often use a BD:           A: 45; B: 56; C: 64; D: 69.  
Would never use an MD:       A: 5; B: 24; C: 33; D: 38.
- Preference for MDs or BDs in three circumstances of use (p. 43):
  - Reading:  
A: MD – 54; BD – 40; both – 6.  
B: MD – 40; BD – 56; both – 4.  
C: MD – 23; BD – 72; both – 5.  
D: MD – 23; BD – 73; both – 4.
  - Translation L1-L2:  
A: MD – 07; BD – 86; both – 7.  
B: MD – 16; BD – 82; both – 1.  
C: MD – 12; BD – 86; both – 2.  
D: MD – 03; BD – 96; both – 3.
  - “To check on the correct use of an English word” that is already known:  
A: MD – 70; BD – 25; both – 5.  
B: MD – 62; BD – 34; both – 4.  
C: MD – 47; BD – 53; both – 1.  
D: MD – 40; BD – 57; both – 2.
- Received some instruction in the use of dictionaries (p. 27):  
French speakers:               none – 80; some – 14.5; systematic – 5.  
German speakers:              none – 50; some – 32; systematic – 18.  
Italian speakers:               none – 44; some – 29; systematic – 26.  
Spanish speakers:              none – 68; some – 24; systematic – 7.  
Average of all students:      none – 60; some – 25; systematic – 14.

There were some other items in the questionnaire, about ownership, reasons for choosing a certain dictionary, etc., but Atkins & Varantola do not mention the results.<sup>71</sup>

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<sup>71</sup> In their “interim report”, Atkins & Knowles (1990: 385) published the following findings, based on the responses of more than 1.100 students: 1) Ownership: no dictionary – 9.2%; one – 49%; two – 30.4%; three – 9.2%; four or more – 2.2%. 2) “Factor(s) influencing their choice of first dictionary”: a) it was recommended by: teacher – 50.8%; bookseller – 11.2%; parents – 7.1%; friends – 6.1%. b) other reasons: clear presentation – 9.5%; low price – 4.5%. 13.6% had received the dictionary as a present.

On the other hand, in the so-called “Dictionary Research Test”, there were three questions that had to be answered without consultation, which means they were typical items of questionnaire surveys. Two of them concern the subjects’ knowledge of parts of speech and of abbreviations (e.g., *pl of*, *poss of*, *3<sup>rd</sup> pers pronoun*) respectively. These results are not disclosed either.

In the third question, respondents were asked in which entry they would look for three multiword expressions (*lame duck*, *to split hairs*, *to do without*).<sup>72</sup> In the presentation of the results in three tables, the authors distinguish: a) the students’ L1 (p. 30); b) their proficiency (p. 31); c) their having been instructed in dictionary use or not. On the right column of each table, Atkins & Varantola indicate in which entry several dictionaries locate the idioms. I will not go into detail, but quote only two interesting statements:

The expectations of those trained in dictionary use and of those untrained in dictionary use seem very much alike. (p. 32)

[...] the fact that the dictionaries do not themselves agree on the most appropriate location for the different types of [idioms], nor show any internal consistency in this regard, makes it impossible for a user to rely on a policy-based approach. (ibid.)

### Bishop (1998)

Since “the use of dictionaries in English and Welsh national examinations is now officially recognised” (p. 3), the author wanted to discover whether students have the knowledge necessary for efficient dictionary use.

The respondents of his survey were 50 learners of French: 25 school students aged 16/17 (group 1, G1) and 25 adults, “whose average age was in their late forties” and who were studying at Open University<sup>73</sup> (group 2, G2). Although these groups are quite different from one another, for example in their “level of maturity”, the results showed that “there are fewer differences [...] than might be anticipated” (p. 4).

The questionnaire was divided into four sections dealing with the following questions: I) How well do the students know their BD? – II) What do they use the BD for? – III) Which reading strategies do they employ? – IV) How is the BD used in translation? In each item, the respondents had to choose one of several options.

Main results (the numbers before and after the slash are the percentages of G1 and G2 respectively, which I calculated from the figures provided by Bishop, keeping in mind that each of them refers to only 25 respondents):

- Section I:
  - Did not read the introduction before the first consultation: 88 / 40.
  - Had not read the introduction since the first consultation: 84 / 68.
  - Understand the phonetic symbols: 64 / 28.
  - Understand the indicators for parts of speech: 88 / 92.
- Section II:
  - When writing in French, the respondents look often up.<sup>74</sup>

<sup>72</sup> The same problem was dealt with by Béjoint (1981, item 19), Tono (1987), Bogaards (1990, 1991a, 1992, 1992a, 1997), and Szczepaniak (2006).

<sup>73</sup> Bishop does not give any information about this university. Please see <http://www.open.ac.uk>.

<sup>74</sup> The author provides the results of other frequencies as well (“occasionally”, “seldom”, “never”).

meaning: 68 / 80;  
gender: 52 / 44;  
spelling: 40 / 64;  
verb forms: 12 / 44.

- Section III:
  - When reading an article “for pleasure” (and encountering an unknown word), the students:
    - “read the whole article once and then reach for the dictionary”: 72 / 24;
    - “reach straight for the dictionary”: 12 / 16;
    - “read it a second time and underline the words [they] don’t know before consulting the dictionary”: 16 / 32;
    - “ignore the dictionary and read for gist only”: 8 / 24.
  - The second item does not really deal with dictionary use, but with strategies of vocabulary learning. After having looked up an unknown word, the students do the following:
    - “write it down in a notebook”: 60 / 76;
    - “try to memorise it straight away (not using any particular technique)": 28 / 36;
    - “carry on reading and hope to remember it later”: 24 / 40.
    - “work out a phrase to put it in and remember it by”: 4 / 8.
    - “repeat it to [themselves] 10 times (or similar technique)": 8 / 0.
- Section IV:
  - Translating into the FL (French) and not knowing the equivalent of an English word, they:
    - “reach straight for the dictionary”: 72 / 44;
    - “think about the possible meanings the word might have in different contexts [...] before [they] look it up”: 24 / 44;
    - “think of a synonym to see whether [they] might know it in French”: 12 / 40.
  - Translating into the L1 (English) and not knowing some word, the respondents:
    - “try to guess the word in the context before [they] look it up": 72 / 96;
    - “check all the possibilities and make a judgement of best fit in the context”: 32 / 40;
    - “try to identify the part of speech of the word before [they] look it up”: 16 / 24;
    - “go straight to the dictionary”: 16 / 8.

Although the number of respondents was too small to allow any generalization, the survey confirms the following observations: dictionary users do not read the introductions (or users’ guides); the information most looked up is meaning; in L1-L2 translation, they immediately consult the BD (cf. Varantola 1998 in 3.2); in L2-L1 translation, they try to guess the meaning of unknown words. However, as to reading strategies, it is astonishing that most high school students (72%) claimed they read the whole text before consulting the dictionary. Probably they had learnt this strategy at school.

### **Chi (1998)**

The author carried out a study on “the effectiveness of explicit teaching of dictionary skills of the teaching” (p. 568). However, in this article she does not yet present data, limiting herself to showing some results of one part of her study, namely of a questionnaire survey.

The respondents were 67 Chinese first-year students at the Hong Kong University of Science and Technology who were attending an “English Enhancement Program”.

Results concerning dictionaries of English:

- Ownership of BDs, MDs and portable EDs: all three types – 40%; BDs and MDs – 30.7%; only BDs – 13.8%; BDs and EDs – 12.3%.

- 97% agreed with the statement that dictionaries are useful in learning English; 91% disagreed with the assertion that good learners do not need dictionaries.
- Frequency of use: “very often or quite often during term time” – 66%; often “during vacation time” – 24%.
- Most frequent circumstances of use: reading for studies – 94%; writing for studies – 85%; reading at leisure – 47%; vocabulary building – 38%; writing for leisure – 36%; for general interest – 30%; playing word games – 15%.

The remaining results refer only to English MDs:

- Information looked for “all the time”, “very often” or “quite often”: definition – 79%; spelling – 72%. Information never looked up: usage notes – 54%; pronunciation – 46%.
- How do respondents proceed in case of polysemous words: 83% “go through all the explanations”; 76% base their decision on the examples; 25% choose the explanation they understand best; 17% “base the decision on the grammatical information provided”.
- Received instruction on dictionary use: none – 68%; only about “sound symbols (IPA)” – 17%; about “symbols which show grammatical information” – 9%; about how to use examples “as reference for one’s own writing” – 6%.

### **Li (1998)**

The author conducted a questionnaire survey and administered a translation test. Both dealt with the use of dictionaries of English.

As to the survey, 900 teachers and students at Wuxi University of Light Industry (Eastern China) were asked to fill out a questionnaire “which was printed on a single sheet of paper” (i.e. it did not contain many items) and whose questions were mostly in multiple-choice form. Six hundred ninety-one students and 110 teachers returned it. The data were processed with “the help of statistics software SPSS (the Statistical Package for Social Sciences)”. Li distinguishes teachers of English and of Sciences and five groups of students as well as ages and genders, but only for some of the items does she make these distinctions in the data.

Main results of the survey (p. 64-72):

- Ownership: on average, respondents owned 4 dictionaries; however, among the teachers of English the average was 16.
- Types of dictionaries owned: a) (all respondents): English-Chinese BD – 96.8%; Chinese-English BD – 45.3%; English MD – 27.7%; Special Purpose English dictionary – 32.3%. b) Among the teachers of English, the respective percentages were: 100 / 97 / 97 / 44.
- “Primary consideration in purchasing a dictionary”: information on both grammar and usage<sup>75</sup> – 45.4%; number of entries – 39.2%; “size” (or “convenience”) – 8.6%; price – 5.6%.
- Frequency of use: 15.28 times per month on average; lowest average – Science teachers (11.78); highest averages – “Humanity students in a 3-year program” (20.74), teachers of English (19.86) and postgraduates (19.77).
- Information “often” looked for: meaning – 55%; usage – 49.6%; pronunciation – 30%; spelling – 22.0%.
- Types of lexical items considered problematic and looked up: “common words used in special fields” – 48.5%; idioms and phrases – 31%; special terms – 18.8%; general words – 1.6%.

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<sup>75</sup> In Figure 1, which shows the results, Li does not use the words “grammar and usage”, but rather “examples”.

- Had received training in dictionary use (on average): none – 71%; some – 25%; formal training – 4%. (However, 70% of the teachers of English had received some training “when they were English-major students”.)
- Teacher’s role in dictionary training: “More than 60% of the respondents in each group considered it necessary for language teachers to teach reference skills and organise relevant exercises in class. 94.4% of the English teachers are willing to take the responsibility.” (p. 71)

Li’s report on the translation test is summarized in chapter 3.

### **Potter (1998)**

With regard to dictionary examples, the author defends the use of authentic example sentences selected from corpora. In only three sentences of her paper does she mention “the preliminary results of a recent survey of learners’ dictionary users conducted by COBUILD, which found overwhelming approval among teachers and learners of English for real examples taken directly from a corpus”:

At the time of writing, 190 respondents had reported that they liked real examples or liked them a lot; while only 22 were indifferent or disliked them. A very few respondents made adverse comments relating to the fact that real examples are sometimes distracting or odd. (p. 358)

### **Asher, Chambers & Hall (1999)**

As becomes clear in the abstract, the authors do not report a user survey; nevertheless their study has to do with dictionary use:

From June 1998, GCSE MFL candidates [in England and Wales] will be allowed to use bilingual dictionaries in the reading and writing tests, in the preparation of the speaking tests, and for initial preparation and final checking of the listening tests. This paper describes the first stage of a [sic] enquiry into how teachers are framing their policies on resources and adapting their classroom strategies in response to this innovative development” (p. 28).<sup>76</sup>

They sent a questionnaire to 25 secondary schools and two colleges of Further Education which “offer GCSE courses in MFL” (p. 29).

General results (the figures refer to the numbers of institutions):

- Languages taught: French – 27; German – 25; Spanish – 15; Italian – 5.
- “Does the department have a policy on dictionary use?” – No: 11; yes: 16 (in these 16 institutions, the policy is quite diverse).
- “Does the school’s English [i.e. L1] department have a dictionary policy?” – No: 24; yes: 3.
- Are dictionaries an integral part of MFL departmental resources? – Yes: 24; no: 3.
- Factors that influenced the choice of dictionaries: cost – more than 18; other criteria: ease of use, clarity, size and durability.
- Are pupils encouraged to buy their own dictionaries? – Yes: 27; 20 institutions “give specific recommendations on ‘best buys’ which mirror closely their own criteria”.
- “Does the department provide specific training [in dictionary use] in each year”? – Yes (in most institutions; however, in some, “training appears to be *ad hoc*” (p. 32).

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<sup>76</sup> GCSE = General Certificate of Secondary Education; MFL = Modern Foreign Languages.

Since only BDs were mentioned in the abstract, it is strange that in their survey questions and results the authors do not distinguish BDs from MDs or refer explicitly to BDs.

### **Barnes, Hunt & Powell (1999)**

After the announcement that the use of BDs would be authorized in England and Wales in examinations in MFL for GCSE (cf. note 76), the authors carried out a survey of the use of BDs and teachers' opinions. A "simple questionnaire was sent to a convenience sample of 300 secondary institutions in the Midlands in July 1997" (p. 20). Exactly 100 questionnaires were returned.

Curiously, in the nine long pages of their article, Barnes, Hunt & Powell do not say a word about the foreign languages taught, so that the reader does not know the languages of the BDs. Furthermore, the authors conclude by mentioning opinions on dictionaries in general, without distinguishing between BDs and MDs. Such differentiation is lacking in the tables with the data as well, except for Table 4.

I will summarize some of the results, generally providing only the larger percentages.

- 94% knew that their students would be allowed to use dictionaries (i.e. BDs) "at GCSE".
- 52% of the schools did not own enough suitable dictionaries.
- According to 77% of the teachers, dictionary use was "incorporated in [their] scheme of work".
- Sum of percentages of respondents who agreed or agreed "strongly" with the following statements:
  - "Dictionaries are helpful to pupils": 86%.
  - "Dictionaries are an essential language learning tool": 91%.
  - "Using dictionaries at GCSE is good preparation for advanced level study": 87%.
  - "Dictionaries are suitable for all students": 28%. (65% disagreed.)
  - "Dictionary skills are best taught explicitly": 75%.
  - "Dictionary skills should be integrated from year 7": 91%.
  - "My pupils are familiar with using English dictionaries": 36%.
  - "Dictionaries should be used in all skills" (i.e. reading, writing etc.): 38%.
  - "The use of dictionaries in preparation time for speaking tests is helpful": 60%.
  - "Using dictionaries in an exam is an authentic task": 74%.
  - BDs "are appropriate at GCSE": 82%.
  - MDs "are appropriate at GCSE": 12%. (73% disagreed.)
  - "Pupils should equip themselves with suitable dictionaries": 74%.

At the end of the questionnaire, there was an item in which the teachers could express their opinion on dictionary use in FL exams at GCSE. Since the authors only cite a few favourable and some unfavourable opinions, without indicating numerical data, I will not go into details.

### **Böhner (1999)**

The author wanted to discover how students of the German high school at which she was teaching used the English MLDs they were allowed to consult in exams, i.e. OALD and LDOCE. Together with some students, she designed a questionnaire. It was filled in by three groups: 1) 107 eleventh graders with little practice in the use of MLDs; 2) 86 students

of English courses in year 12 or 13, with little motivation for the learning of English (although they do need English in the final exam); 3) 78 in year 12 or 13, learning English at an advanced level.

Results:

- The use of MLDs in exams:
  - Information looked for: meaning – 100%; synonyms – between 60 and 65%; spelling – between 50 and 55%; idioms and collocations – 40% (group 3), 28% (group 1); grammar – 21% (group 3), 17% (group 2), 10% (group 1).
  - Circumstances of use:
 

	Translation L2-L1	Reading	Writing
Group 1	97%	59%	57%
Group 2	100%	83%	62%
Group 3	100%	73%	48%
- The use of dictionaries (BDs and MLDs) at home:
  - Information looked for:
 

	in BDs:		in MLDs:	
	meaning	spelling	vocabulary and synonyms	grammatical information
Group 1	100%	52%	43%	14%
Group 2	94%	54%	58%	22%
Group 3	92%	43%	62%	16%
  - Amount of time: between 67% e 93% of respondents use the dictionaries “not more than 15 minutes a week”.
  - Aspects which keep students from using them regularly and frequently: “incomprehensible definition” – approximately 70%; “too time-consuming” – between 60% and 70%; “confusing lay-out” – 60% (groups 1 and 2), 20% (group 3); “too little practice” – between 15% and 30%.
  - Suggestions for improvements (“criteria for an ideal dictionary”): “easy to understand definitions” – between 90% and 100%; “clear lay-out” – between 75% and 82%; “single entries for each meaning” – 60%; “up-to-date” – 72% (groups 2 and 3), 58% (group 1).

At the end of the article, Böhner reports the following little study: She asked the students to decipher a totally ambiguous headline; they were allowed to use four MLDs (CIDE, COBUILD, LDOCE, OALD) and then were to evaluate them with respect to “easy-to-understand-definitions”, “clear lay-out” and “speed they could be used with”. Unfortunately the author does not reveal any data, making only remarks like this: the students appreciated most the LDOCE definitions and the CIDE lay-out, and they considered COBUILD very confusing and strange.

### **Hartmann (1999)**

Up to now, this report has been available on the internet, and I hope it will remain there. Thus, a summary might be unnecessary in this book. However, in the first place, the

report may not always be accessible; secondly, I want to include all those studies which I know; thirdly, it may be interesting for the public to read a short summary.

The survey was considered a case study because it was conducted in a specific university, *viz.* the University of Exeter. After citing several studies, Hartmann stated:

None of the above-mentioned studies have contributed significantly to a revealing profile of (British) university students as dictionary users. So it was a great challenge to attempt a survey of the whole range of issues across departmental or faculty boundaries. The project was entitled ‘University Reference Skills: A Case Study of Dictionary Use in Higher Education’.

A first questionnaire was piloted with over 100 students and then modified several times. The final version – whose questions are commented on by the author – was distributed to 2,040 undergraduate and postgraduate students at five schools (Business & Economics, Education, Engineering & Computer Science, English and Modern Languages) and two centres (Foreign Language Centre and English Language Centre). Seven hundred and ten (i.e., 35%) were filled in and returned.

Since 131, or 18.5%, of the 710 respondents were foreigners (with 29 different mother tongues), it is a pity that in the findings Hartmann does not make any distinction between native speakers and non-native speakers.

Main results (without mentioning personal data, like gender or age):

- “Start of dictionary use”: at primary school – 72.5%; at secondary school – 25.8%.
- Purchase of first dictionary: at primary school – 39.9%; at secondary school – 49.2%; at further education college – 4.1%; at university – 3.9%.
- Type of dictionary owned (five choices were offered): MD – 94.7%; BD – 77.2%; thesaurus (e.g. dictionary of synonyms) – 66.2%; encyclopedia – 40.5%; special subject dictionary (e.g., of music) – 37.8%.
- Ownership of some type of electronic dictionary: none – 65.5%; “in the form of a personal computer” – 22.3%; “in the form of a pocket calculator” – 7.1%; other format – 3.5%.
- Number of dictionaries owned: on average – 5.9; at least 1 – 98.3%; more than 4 – 46%; of native language (English) – 4.99; of other languages (“non-English”) – 10.16<sup>77</sup>; average number owned by students majoring in English – 10.47; average number owned by students of Modern Languages: 6.15; smallest average: students of Engineering & Computer Science (3.09).
- Type of dictionary used most frequently: MD – 50.4%; BD – 39.8%; thesaurus – 5.1%; special subject dictionary – 3.7%; encyclopedia – 0.9%.
- Facts concerning a dictionary that respondents can remember: title – 80.2%; colour – 76.1%; publisher – 62.3%; size – 59.7%; year of publication – 57%; editor – 35.9; number of entries – 30%.
- Reasons for most recent dictionary purchase: “own deliberate choice” – 55.5%; recommended by teacher or tutor – 30.6%.
- Scale of priorities when buying a dictionary (“averages out of 6”): “relevance to my needs” – 4.04; number of “words” (i.e. entries) – 3.39; number of examples – 3.25; “a reasonable price” – 3.21; the reputation of the publisher – 3.15; “convenient to carry about” – 2.84.
- Use of information contained in the appendices: lists of abbreviations – 52.6%; lists of irregular verbs – 46.5%; units of measurement – 33.5%; proper names – 16.3%.
- User guidance notes (in case they are known to exist): are not read (respondents “manage without them”) – 70.9%; are considered user-friendly – 21.8%; are studied – 10.2%.

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<sup>77</sup> This figure is strange: if the biggest average (i.e. among English majors) of all types of dictionaries is 10.47, the average of all respondents as to one special type (non-English dictionary) cannot be 10.16; it should be smaller, especially because the average number of dictionaries owned by students of Modern Languages was only 6.15.

- Occasion and place of dictionary use: studying at home – 97.7%; studying in a library – 58.6%; during a class – 17.8%; during an exam – 10.6%.
- Circumstance of use: writing (“work on a written assignment”) – 91.2%; reading of textbooks – 68.3%; translation (“work on a translation exercise”) – 60%; playing word games – 40.4%; reading of academic journals – 39.1%; reading a book “for entertainment” – 26.9%; reading of newspapers and magazines – 26.2%.
- When they notice a new or difficult word when reading, respondents do the following (in rank order): look it up in a dictionary – 2.71; guess the meaning – 2.53; ask other people what it means – 2.46; ignore it and go on reading – 2.06.
- The four circumstances in which dictionaries are used most frequently (in rank order): writing – 2.95; reading – 2.46; listening – 1.53; speaking – 1.29.
- Eight information categories most looked up: meaning – 3.16; spelling – 2.98; “synonyms/words of similar meaning” – 2.38; “examples of a word’s use” – 2.13; “a grammar point, e.g. part of speech” – 1.95; encyclopaedic information – 1.87; pronunciation – 1.64; “word origin/etymology” – 1.63.
- Are respondents satisfied with their ability to use the dictionary? Yes – 90.6%; no – 6.4%.
- The information looked up is not found: sometimes – 74.1%; never (i.e. this never happens) – 13.5%; often – 8.6%; very often – 0.7%.
- Types of information most difficult to find: specialized technical terms – 52.2%; idioms and phrases – 42.3%; “common English words in a special subject area” – 29.1%; general English words – 6.4%.
- Causes of these difficulties: “not enough information in the dictionary” – 63.7%; “unclear layout” – 19.7%; “I don’t read the instruction to the user” – 12%; “my lack of dictionary knowledge” – 8.2%; “my lack of dictionary skills” – 8.0%.
- Using dictionaries is: “worthwhile/informative” – 77.2%; easy – 58.3%; “exciting/fun” – 12.1%; “tedious/boring” – 10.6%; “of little help/not worth the trouble” – 2%.
- Using dictionaries can: “improve my writing” – 83.2%; “help me perform better in my studies” – 77.3%; “improve my reading” – 64.7%; “help my speaking” – 37%.
- Dictionary use had been taught: a little – 43.2%; never – 34.6%; yes – 21%.
- Level of importance of instructions in dictionary use: important – 39.4%; very important – 30.2%; not important – 15.5%.

Contrarily to many other surveys, the number of respondents in this one was very large (710). Unfortunately, in most results no distinction was made between native and non-native speakers – as was already said above – nor between MDs and BDs.

The questionnaire survey “was supplemented by 17 interviews with representatives of the staff in [University of Exeter] departments, schools and centres”, but only the fourth of five questions dealt specifically with dictionary use (the last one asking for comments). Hartmann does not provide any numerical data of the results of these interviews. I quote only a few of the statements:

Dictionaries and other reference works do not figure prominently in staff meetings, they are rarely part of a departmental policy, or specified in student handbooks or module descriptions.

[...] the comment recurred, even among language tutors, that ‘dictionaries are taken for granted’ [...], or ‘dictionary use is not a priority’, and deliberate instruction is (therefore?) not generally provided except where it may form part of a course in Linguistics [...] or Lexicography [...].

### Nesi (1999)

The author discusses the topic “reference skills in higher education” (cf. 1.4.1). In one part of her paper she reports a questionnaire survey.

Having sent a request for information on that subject to five mailing lists, she received responses from 35 lecturers, who taught either Linguistics or one of seven FLs. Most of the respondents “were based at UK universities, but messages also arrived from Australia, Brunei, Denmark, France, Israel, Japan and Russia”. Nesi explains that because “the amount of information received from each informant varied, and because my informants were self-selecting and therefore had a particular interest in the teaching of dictionary skills, this report does not present quantitative information”.

After discussing the six stages of consultations mentioned in 1.4.1, she reveals some results. I will cite only those cases in which the opinions were those of “many”, “most”, “several” or no respondents:<sup>78</sup>

- “Many informants believe that their students had not received much dictionary skills instruction prior to tertiary level.”
- “Most of my informants reported dictionary skills training on presessional courses, in first year programmes, or in an isolated series of lectures, rather than as regular input throughout a student’s university life.”
- “Several informants expressed dissatisfaction with current practice.”
- “Some of my informants reported wariness about unnecessary dictionary consultation.”
- “Several informants noted that dictionary skills training was not ‘sexy’ and that students and tutors found it boring.”
- None of my informants made particular reference to information in dictionaries listed independently of the main A-Z listing, such as usage notes, study pages, pictures [...].”
- “[...] the process of checking dictionary information against the text was not specified by my informants [...].”

### **Sobkowiak (1999)**

[Lew (2004: 23)]

In his review of Sobkowiak’s book, Lew mentions that the author presents on six pages “a detailed overview of the reported interest in pronunciation information in dictionaries” and that “Sobkowiak’s own questionnaire did reveal a rather high level of interest in pronunciation”, which may be due to the fact that “his subjects were all English majors, more advanced than in most other studies”. No other information is provided on that questionnaire study.

### **Stark (1999)**

In this book, the author deals with encyclopaedic learners’ dictionaries. In chapter 2, he first discusses research on dictionary use and presents a table with the most important data from 38 empirical studies; he then reports his own survey.

A short questionnaire was filled in by 40 informants (23 foreigners living in the UK and 17 Japanese residing in Japan). Stark does not reveal how they were selected.

In several figures he shows the following data: a) profession, nationality, first language of every informant and the English MLDs that were owned by each of them; b)

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<sup>78</sup> Sometimes Nesi mentions the opinions of certain “informants”, but these seem to be respondents of other surveys. My quotations are restricted to the cases in which it is quite clear that the author refers to the responses of her own informants.

the number of owners of several English MLDs; c) the “correlation between academic specialism and MLD ownership” and “between cultural background and MLD ownership”. Since these details do not seem very important, I present only the results related to the four more interesting questionnaire items:

- Reasons for choosing particular MLDs: somebody (mainly teachers or educational establishments) recommended the MLD – 40%; “to assist with academic study” – 12.5%; “received as a gift” – 10%; size (e.g. pocket dictionary) – 10%; reputation – 5%; “specific design features” of the MLD (e.g. “huge number of definitions”) – 5%; “to assist with professional activities” – 5%; availability – 2.5%; price – 2%.
- Circumstances of use: reading and writing – 37%; reading – 27%; writing – 12%; reading and speaking – 5%; writing and listening – 3%; listening – 3%.
- Types of information consulted: meaning – 44%; meaning and grammar – 15%; meaning and spelling – 10%; meaning and pronunciation – 10%; grammar – 5%; pronunciation – 3%.
- “Attitudes towards the inclusion of encyclopedic information in learners’ dictionaries”: “useful” – 59%; “not sure” – 23%; “not useful” – 18%.

Stark’s book is very good, very informative, but his survey leaves much to be desired, not only because of the small number of informants, but also because only four items yielded relevant data, and one sole question (the last one) refers to the topic of his book.

### Bishop (2000)

The author wanted “to assess Open University students’ attitudes to being allowed to use dictionaries in our French exams” (p. 57) and to discover how they used them.<sup>79</sup> He mostly employs the word *dictionary*, but in reality the authorization and his study concern only BDs.

A questionnaire – in which some of the items were open-ended questions – was sent to 200 Open University students (mostly over 35), “chosen at random amongst those taking the second level 30-point course *Envol* [...] examinations” (p. 59). 145, or 72.5%, returned the questionnaire.

Bishop got interesting data; however, in the items which deal with consultations during the exam, there is the problem that the responses were not given immediately afterward, since “the questionnaire was sent within a fortnight of the end of the examination period” (p. 59).

Main results:

- BDs in exams are helpful: yes – 71.2%; possibly – 24.7%; no – 2.7%.
- “Does the knowledge that you can use a dictionary [...] mean you do not memorise so much when you are studying?” No – 79.3%; possibly – 11.7%; yes – 9%.
- Type of BD used in last exam: “a large [BD] (over 25 000 words) but no grammatical information” – 23.3%; “a large [BD] with grammatical information and verb tables” – 36.5%; “a small [BD] (under 25 000 words) without grammatical information” – 26%; “a small [BD] with grammatical information” – 6.2%. Bishop comments that a few students used a smaller version than usually and that some of these informants regretted this.
- If they could choose, they would use: a BD – 78%; a BD and an MD – 9.6%; only an MD – 4.8%; 26% would take in “a separate grammar book in addition”.

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<sup>79</sup> About Open University, cf. footnote 73.

- Frequency of use during the examination (I indicate only the frequency “1 to 5 times”): “in the Reading test” – 65.1%; “in the Writing test” – 50%; “in the Listening test” – 39.7%; “when preparing for the Speaking test” – 22.6%. Bishop comments that “if we define overuse as more than ten times in the 45 minutes allocated to each of the first three skills”, only less than 5% on average overused their dictionaries and thereby lost time. However, in the writing test, 10.9% consulted the BD more than ten times.
- In the encoding activities “Writing test” and “preparing for the Speaking test”, the BD was used often or occasionally for looking up: the French equivalent – 37.6%; the English equivalent of a French word – 28.1%; gender in French – 27.4%. The percentages for other types of information are below 17.
- “In what way did the use of [BD] help compared to last year (when you could not use a dictionary)?” – It helped “to better understand the written passage by enabling me to look up some key words” – 61.7%; it “probably raised the quality of my performance” – 53%; it “increased the quantity I could do in the time available” – 21.7%; it “reduced the amount I could do in the time available” – 19.1%; it “made no overall difference” – 18.2%; it “may have lowered the quality of my performance” – 5.2%.
- In the open comments, Bishop noticed that “for many students the presence of a dictionary had a calming effect” and, on the other hand, that 40% perceived that “good management of time when using the dictionary is essential”.

In his conclusions, the author remarks that in general BDs are used more for “passive verification than [for] positive extension of language acquisition”, nonetheless causing “psychological benefits”. For both reasons, he presents “a set of guidelines for good practice in the way dictionaries should be used in the constrained environment of the examination” (p. 64).

### **Fan (2000)**

[Thumb (2004: 30 f.); Kobayashi (2006: 33)]

According to Thumb, who carried out an investigation into the use of LDTs,

[...] there has been only one study on the use of English-Chinese bilingualised learner’s dictionaries in Hong Kong. Fan (2000) studied the look-up behaviour of 1,076 first year degree students from seven tertiary institutions of Hong Kong. The instruments for collecting data were a questionnaire and the Word Levels Test.

Results of the questionnaire survey:

- The “overwhelming majority of students” used LDTs and found them useful.
- Most students “made limited use of the dictionaries”.
- “The most often looked-up information was word meaning and the least frequently consulted dictionary information was related to the speech habits and the social and cultural life of the L2 speakers, i.e. information on collocations, frequency, pronunciation, and appropriateness.” These four types were consulted more often by the more proficient students, who also found them more useful. On the whole, the “more vocabulary proficient students used more information [...] than those who were less proficient”.
- Though the respondents “did not consider L1 Chinese equivalents very useful”, they used them more frequently than English definitions, and the more they looked up Chinese equivalents, “the more they would ignore the other kinds of information [...] including English definitions”.

Thumb comments that “the self-report method of data collection means that it is difficult to draw firm conclusions from Fan’s study”.

After providing a short summary, Kobayashi claims that this study “suggests that many students did not make full use of bilingualized dictionaries or were unaware of the importance of various aspects of word knowledge”.

### **Höfling (2000)**

[Höfling (2006: 63-66); Höfling (2006a: 72 ff.)]

In her master’s dissertation, the author included a small survey, the aim of which was to discover attitudes and behaviour of BD users. Höfling interviewed 20 informants: students and teachers of English in several types of schools and in English-major courses, translators and bilingual secretaries. She does not show quantitative data, but establishes the following “profile”: the BD user owns such and such type of dictionary; consults it quite regularly for decoding (in reading or translation); sometimes considers the information provided by the BD sufficient or satisfactory; looks at graphics, tables and figures and thinks them important, as well as information on grammar; considers phonetic transcription fundamental; looks up cross references; and reads information, when available, on metaphors and idioms.

### **Komuro & Yamada (2000)**

In their paper, which deals with BDs for Japanese learners of English, specifically with BDs “for production”, i.e. Japanese-English dictionaries (JEDs), the authors report the following survey:

167 “take-home questionnaires” were distributed to “students (mostly freshmen and sophomores) at the School of Commerce, Waseda University, Tokyo”. Ninety-nine (59.28%) were returned.

Results:

- “More than half of the dictionaries students use were bought during their high school years, and quite a few, back in their junior high school years; or they use dictionaries that their siblings had used, or one they found at home. Accordingly, many of the listed dictionaries are out of date, and are not appropriate for their academic work.”
- Reasons for acquisition: “recommendation by schoolteachers has the greatest influence on students’ choice”; “[...] not a few students bought a dictionary to study for university entrance exams”.
- The 99 informants used a total of 114 English-Japanese dictionaries (EJDs), 40 Japanese-English dictionaries (JEDs), 25 English MDs and 12 electronic dictionaries, so that, on average, each respondent used 1.97 dictionaries. Ninety two point one per cent of the EJDs and 95% of the JEDs were bilingual learners’ dictionaries, and 80% of the MDs were British MLDs. Thirty nine point four per cent regularly used only one dictionary – which was an EJD; 35.4% used two, normally an EDJ and a JED.
- Percentages of dictionary use in encoding activities:
  - L1-L2 (Japanese-English) translation

	always	sometimes	never
EJD	36.8	39.5	14.9
JED	52.2	30.0	17.5
English MD	3.8	38.5	57.7

- Writing of letters or essays

	always	sometimes	never
EJD	36.0	27.2	19.3
JED	52.2	32.5	10.0
English MD	7.7	15.4	50.0

- How are the BDs used in encoding activities?
  - In the case of the EJD, the authors distinguish between “checking” and “looking up”. The EJD is used mainly for checking: 58.6% of respondents do this in translation, 56.6% in writing. Students check mostly meaning, far less often how a word/expression is used or, in translation, whether a word found in another dictionary is appropriate. Only 27% in translation and 16% in writing consult the EJD to look up some new information, especially grammatical information (9% / 4%) and examples (9% / 7%).
  - In the JED, the information type most looked up is equivalents (in translation: 17%; in writing: 18%).
- Instruction on dictionary use: 46.5% had received some; 37% had only been told by their teacher which types exist and had been recommended some (mostly EJDs); 29% of the respondents had been “trained how to retrieve information effectively” (in EJDs: 14%; in JEDs: 10%, in English MDs: 4%).

In their conclusion, Komuro & Yamaha remark:

Although much is left to explore about learners' dictionary use for production, a low level of 'dictionary awareness' among students is clearly observed, and it may be blamed on that of English teachers. [...] the variety and availability of encoding dictionaries of high quality do not seem to be widely known to teachers, nor to students. First of all, English teachers must be educated about dictionaries, and how to introduce and use them effectively in study programmes.

### Müller (2000)

In the introduction to her master's dissertation (cf. chapter 7), the author asserts that she conducted a questionnaire survey in 1997. The informants were 36 Brazilian high school and language school teachers of English. Müller wanted to know their opinion and attitudes towards dictionary use.

Results:

- 88.9% of respondents thought consultation pleasurable, mainly because it increases their knowledge (78.1%).
- For 41.6%, the dictionary has more authority than the teacher; for 44.4%, its authority is not superior to the teacher's, only different; 11.1% did not see any difference.
- Because they had not found all words they had looked for, 55.5% of respondents considered the dictionaries less good than expected; 41.6% were conscious that no dictionary can contain all lexical items.
- About instruction on dictionary use: 47% learned alone how to use their dictionaries; 44% had received some instruction at school; 94.4% thought such teaching necessary, but only 14.7% carried out some activity to teach dictionary use.
- According to 44.4% of informants, their students use dictionaries seldom in class or during their homework; 13.9% said their pupils use them “all the time”.
- The teachers use their dictionaries mainly in L2-L1 translation (80.5%), L1-L2 translation (25%), in writing (19.6%), and in reading (16.6%).

- Main purposes of consultations: “check the meaning found in other dictionaries” and “check whether a specific word exists. Information on morphological, syntactic and phonological aspects were not much looked for and, surprisingly, meaning was the information least sought.

Unfortunately, Müller does not distinguish between BDs and MDs. Perhaps it was implicit in the survey that the dictionaries were BDs, which would explain why they were used mainly in translation. And, of course, two facts are very strange: that the most important purpose was checking the meaning found in other dictionaries (in MDs?) and that meaning was the information least looked up. Maybe the respondents thought that meaning is looked up in MDs, whereas BDs provide equivalents. But why were equivalents not mentioned?

### Tall & Hurman (2000)

Hurman & Tall (1998) assessed “the impact of different dictionaries” after the use of BDs in “French written GCSE examinations” had been authorized in England and Wales in 1998.<sup>80</sup> This article summarizes part of the research, namely the two following studies:

In the first one, “301 candidates were observed in 16 schools”. In fact, the researchers observed only how many times the students consulted BDs in their French written exam. But subjects were divided into two proficiency groups, and “the number of observations was standardised to a maximum of seven” for the first ¼ hour, the last ¼ hour and the period between the two. (This study could be included in chapter 3 of this book, but since it is very brief, I present it here.)

In the second investigation, conducted by questionnaire immediately after the exam, more than 1,300 students from 20 high schools were asked about their consultations.

The authors were interested especially in comparing several BDs. Having chosen the four that were most used in schools<sup>81</sup>, they classified them in three groups: two (A and B) are “the traditional type”, being different only in coverage (70,000 vs. 40,000 entries); one (C) “is totally different in presentation” and “provides additional help, appears easy to use and yet still contains a good range of vocabulary”, although it contains only 20,000 entries; the fourth BD (D) offers even fewer lemmas (10,000); it “was designed to be a budget dictionary specifically aimed at candidates taking GCSE” (p. 50). BDs C and D can be considered learners’ dictionaries, and in the article it becomes quite clear that Tall & Hurman wanted to prove these BDs to be better for students. Like some other authors, they mostly use the general term *dictionary* instead of *bilingual dictionary* (whose acronym “BD” would be clearer and space-saving).

The data were analyzed statistically.

First study’s result (obtained through a complex methodology):

- Relatively few students used the BDs primarily to check their answers. “Foundation candidates tended to use the dictionary initially to understand the questions whilst the largest proportion of Higher candidates use the dictionary in the middle part of the exam, presumably to help them with the answers.” (p. 51)<sup>82</sup>

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<sup>80</sup> GCSE = General Certificate of Secondary Education

<sup>81</sup> I will use the letters A, B, C and D instead of titles.

<sup>82</sup> The authors do not provide any details about the examination, apart from its being a French written exam at GCSE. Since they use the words “questions” and “answers”, it does not seem to have been an essay

General results of the questionnaire survey (on more than 1,300 students):

- 89% of respondents had a dictionary (BD?) at home.
- 88% claimed that “having a dictionary in the examination made them more confident”.
- “Well over 90% of them felt they could find the French equivalent of an English word and vice versa.”
- “Just over 60% had been trained” in dictionary use; 38% had not been instructed how to consult the BD they used in the exam.

As to the comparison between the four BDs, I present the data concerning only the two BDs with the highest percentages:<sup>83</sup>

- BDs considered the best:
  - for finding a French equivalent: C (57%), D (48%);<sup>84</sup>
  - for finding an English equivalent: C (51%), D (48%);
  - for looking up verb forms: D (70%), C (50%).

The following results were obtained through two open-ended questions (“What do you like/dislike about the dictionary you used in the writing examination?”). They were grouped together in eleven items. Again I show only the results for the two BDs with the highest percentages:

- Positive and negative characteristics of the BDs:
  - “well set out” (well arranged): C (15%), D (13%);
  - “easy to read”: D (13%), B (7%);
  - “easy to use/find words”: C (40%), D (35%);
  - “not comprehensive”: D (42%), C (10%);
  - “gives phrases/examples”: C (20%), D (10%);
  - “verb tables/information”: D (26%), C (7%);
  - “letter hints” (i.e. show how to write letters): D (12%);
  - “useful during exam”: B (14%), A (10%) and C (10%);
  - “provides confidence”: B (8%), A (7%);<sup>85</sup>
  - there is nothing the students dislike in the BD (including “nothing” and “no answer”): C (43%), D (21%);
  - look-ups take too long: B (18%), A (12%) e C (12%).

The sum of evaluations proves that the BDs especially designed for learners – C and D – were considered the best ones. *Quod erat expectandum* – which was to be expected.

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composition. The terms “Foundation” and “Higher” refer to *Foundation Tier* and *High Tier* respectively. About these, please see <http://www.dfes.gov.uk/qualifications/faq.cfm?sID=1#72>.

<sup>83</sup> Since each BD was used by a different number of students, the percentages reflect diverse numbers; for example, 40% of C does not represent the same number as 40% of D.

<sup>84</sup> The percentages refer to the answer “yes” to the question “Can you find the French equivalent of an English phrase?”

<sup>85</sup> In the last two questions, the BDs for learners – C and D – surprisingly did not receive a good evaluation. The authors speculate that this may be due to the fact that the respondents had already made positive comments on these two BDs in previous items.

### **Corpas Pastor, Leiva Rojo & Varella Salinas (2001)**

Emphasizing the importance of dictionaries, the authors assessed their use in a specific group of informants, viz., students in a university Translation and Interpretation course in Spain. Almost all 271 respondents were Spaniards, who had chosen English or French as their first FL, with the second one being mainly English, French, Italian or German.

Two questionnaires were administered. The first one, with mostly multiple-choice questions, was filled in by 212 students of all four course years. The second questionnaire, which was designed after the analysis of the data from the first one and which contained mainly open-ended questions, was administered to 59 students at the end of the second year; the first FL of 46 of them was English, 13 had chosen French.

The authors show the results of each group (first year, second year, etc.) of respondents to the first questionnaire. In the data from the second one, they even distinguish between students of English and of French. It would be superfluous for me to present all the data in detail, so I shall restrict myself to the general findings concerning dictionaries (summarized in the authors' conclusion).

- Respondents preferred BDs, both general ones and specialized ones (e.g., of Economics or Law).
- Very few used onomasiological dictionaries.
- More advanced students tended to use dictionaries more frequently, especially MDs.
- Types of information most looked for: equivalents (in the BD), definitions (in the MD), usage examples ("contexts"), spelling; the least sought: etymology, cross-references, illustrations. The last type was looked at only in specialized dictionaries, where the illustration helps one to understand lexical items (e.g. in technical dictionaries).
- Respondents complained about the lack of lemmas and wanted more information in the entries, especially "contexts".

### **Jakubowski (2001)<sup>86</sup>**

[Dziemianko & Lew (2006a: 15)]

Dziemianko & Lew provide the following summary of this study:

Jakubowski (2001) looks into the use of bilingual and monolingual dictionaries by Polish high school learners. Using an 18-item questionnaire on a sample of 86 subjects, Jakubowski focuses on the comparison of his Polish subjects with subjects of other nationalities, as reported in other studies [...]. Also, he contrasts results for two groups of learners attending English courses of two different intensity levels; he refers to the two groups as majors and non-majors, respectively. As expected, the preference for the bilingual dictionary is less pronounced among the majors compared with the non-majors, but it is unmistakably there in both groups. Interestingly, even though the bilingual dictionary is clearly used more than the monolingual, Polish high school students seem to be using the monolingual dictionary more than a group of Japanese *university* students (Baxter 1980). In terms of information types, monolingual dictionaries are most commonly used for examples of usage, pronunciation, and synonyms. In decoding activities, monolingual dictionaries appear to be seen as better than bilingual for reading and listening, while L2-L1 translation remains strongly the bilingual dictionary domain.

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<sup>86</sup> Bibliographic data according to Dziemianko & Lew: Jakubowski, Marcin. 2001. The use of dictionaries by high school learners: The place of the monolingual and bilingual dictionary in the learning process. M.A. diss., Adam Mickiewicz University.

As regards encoding activities, monolingual dictionaries are seen as better for speaking (the strongest single preference), but not for writing or L1-L2 translation: here, in turn, the bilingual dictionary wins by a wide margin. When asked to rank the relative importance of dictionaries among other learning facilitators, the subjects tended to place dictionaries at the very bottom of the list. Jakubowski also finds that – contrary to expectation – learners *do* make use of the front matter and appendices quite a lot.

### **Winkler (2001, 2001a)**

The author did research using questionnaires and interviews regarding electronic dictionaries (EDs). See summaries in Section 6.2.

### **Lew (2002)**

The author reports on a comprehensive study carried out in 1999 and 2000. Since the data analysis had not yet been concluded, he briefly presents only a few findings.

The subjects were 712 Polish learners of English from several regions and social groups. They were studying in 44 classes at 20 Polish educational institutions and had several proficiency levels. The study consisted of a questionnaire survey, a controlled experiment and a questionnaire filled in by the students' teachers.

The only results Lew presents in this article concern the information looked for:

- The information most sought are meaning, English equivalents, and Polish equivalents. Other types of information are looked for much less; however, more advanced learners are interested in style/register, collocations, synonyms, and pronunciation, too. “[...] while interest in collocational information appears to be growing consistently across the whole range of levels, interest in phonetic information actually declines steadily all the way up to level 4, only to jump back at level 5.” (p. 760)

More details are provided in Lew (2004). This experiment – reported in Lew (2002, 2004) – will be described in 4.3.1.

### **Nishimura (2002)**

The informants of the author's questionnaire survey – which focussed on the use of English-Japanese BDs – were “881 Japanese senior high school and university students”, or more precisely 491 “college students in the first and second years” and 352 “senior high school students, tenth, eleventh, and twelfth graders”.<sup>87</sup>

Main findings:

- Understanding of abbreviations and symbols: in the case of the 14 examples given by Nishimura (*fml*, NS, U etc.), correct answers varied between 1% (college students' knowledge of “NS”, i.e. “Non-sexism”) and 63% (senior high school students' knowledge of “T”, i.e. “transitive”).

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<sup>87</sup> There must be an error of typing or calculation, since  $491 + 352 = 843$ .

- Main complaints about BDs: “heavy to carry in school bags” – 23%; “too many equivalents “to interpret words and phrases with” – 17%; “short of example sentences” – 15%; “typeface too small to read” – 11%; “short of idiomatic phrases” – 9%.
- “What do users expect of dictionaries?” – Most frequent answers: “easy to carry in bags” – 19%; “abundant example sentences” – 17%; “in two colors (black and red)” – 11%; “as many daily expressions as possible” – 7%.
- Acquisition of BD: 66% bought it in the first year of senior high school, i.e. when they were tenth-graders. 53% of these tenth-graders bought a BD which was designed “for users who will be struggling with English of university entrance examination”. The author comments that they “would have a great difficulty making the most of these dictionaries” (p. 246).
- Most frequent reasons for choice of BD: “teachers’ or schools’ recommendation” – 39%; “a large number of entries” – 11%; “various information besides definition [i.e. equivalent]” – 10%; “many usage notes” – 10%; e) “proper font size” – 6%.
- Understanding of “sub-entries” (Nishimura provides the example “what seems (to be [like])”, which he considers a sub-entry of “seem”): 86% did not understand the phrase; 9% understood only what the square brackets meant.

One positive aspect of this survey was the large number of informants. Unfortunately the researcher did not ask questions about several important topics, such as circumstances of use and information looked for. Nishimura explains that he wanted to investigate “the problems and complaints the users have” (p. 243) and “laid disproportionate emphasis on the non-academic side of the dictionary and its users” (p. 251).

### Wingate (2002)

One part of this PhD research report (cf. 4.1) is a survey of dictionary use among Chinese university students in Hong Kong, for whom English was L2, since this is the language used at university. Therefore, the questionnaire items were formulated in English. Because she wanted to avoid one of the common deficiencies of surveys, namely too large a number of questions, Wingate included only 15.

The informants were 97 FL learners, 50 of whom were studying German and 47 French. They had had between 480 and 560 class hours in FL.

Main results:<sup>88</sup>

- Preference for types of dictionaries:
  - LF: BD/F-E – 89.4%; MD/F – 19%; BD/F-C – 17%.
  - LG: BD/G-E – 100%; BD/G-C – 4%; MD/G – 2%.
- Preference for types of dictionaries used to look up English words:
  - LF: BD/E-C – 70.5%; MD/E – 29.5%.
  - LG: BD/E-C – 82%; MD/E – 26%.
- Never used (or tried to use) an MD of the respective foreign language: LF – 38.6%; LG – 71.7%.
- Reasons for not using an MD: definitions too difficult (LF – 80%; LG – 95.7%); too time-consuming (LF – 8.9%; LG – 6.5%).
- Reasons for not using a BD/FL-C (i.e. French-Chinese or German-Chinese): “Chinese is too different from FL [...]. Therefore translations are often incorrect.” (LF – 41.2%; LG – 54.3%); “difficult to buy in Hong Kong / lack of choice” (LF: 35.6%; LG: 22.9%).

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<sup>88</sup> Abbreviations: C = Chinese; E = English; F = French; G = German; LF = learners of French; LG = learners of German.

Not always did all informants respond, so that the percentages refer to diverse numbers.

- Reasons for using a French-English or German-English BD: “more comfortable and convenient to use; easier to understand and find words” (LF – 71.4%; LG – 46.8%); “English and FL are related, therefore translations are more accurate” (LF – 21.4%; LG – 27.7%); “variety of choices; easier to buy in Hong Kong” (LF – 14.3%; LG – 10.6%); “helps to improve my English” (LF – 4.8%; LG – 6.4%).
- Suggestions for improvements in the BDs: more examples (LF: 47.2%; LG – 52.3%). Other suggestions such as “meaning” or “grammar”, reveal “a low level of metalexicographic awareness” (p. 98).
- Information categories looked for “very often” or “often” by both groups of informants: meaning – 99%; spelling – 66%; grammar – 63.9%; examples – 58.8%; pronunciation – 7.2%.
- Received training in dictionary use (question answered by 93 students): in primary school (use of BDs – 35.5%; use of MDs – 11.8%); in secondary school (BDs – 16.1%; MDs – 31.2%); at university (BDs: 6.5%; MDs – 7.5%).

### **Assirati (2003)**

[Höfling 2006: 96 f.]

In one section of her doctoral thesis, Assirati reports a questionnaire survey carried out among 64 Brazilian university students learning English in the first year of two courses (one of which was in Data Processing Technology, while the other one was for training trilingual executive secretaries). Findings:

- Most informants prefer BDs.
- According to them, the main function of dictionaries is to provide the meaning of unknown words.
- Most students do not understand the symbols and abbreviations.
- At the university, 93% of the respondents continued to use the same dictionary they had used at school.

### **Fan (2003)<sup>89</sup>**

[Kobayashi (2006: 33)]

As can be seen in Kobayashi’s summary, this paper seems to report the study already described in Fan (2000):

Fan (2003) examined the use of vocabulary learning strategies by 1,067 Hong Kong Chinese students in order to look at the relationship among the frequency of use, the perceived usefulness, and the actual usefulness of strategies. The students completed a vocabulary learning strategies questionnaire and a vocabulary test. The results show that Hong Kong students least frequently used memorization strategies, such as repetition, association, and grouping. They most frequently used strategies for reviewing known words and dictionary strategies. There were some discrepancies between frequency of use and perceived usefulness. They used guessing strategies more frequently, although they perceived consulting a dictionary as more useful. In contrast, although they perceived management strategies as helpful, they seldom used them. Students who were more proficient in English vocabulary used a wider range of strategies more often than the less proficient students. In particular, they used sources, guessing, dictionary, and known words strategies more often than the less proficient students. The more

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<sup>89</sup> Bibliographical data provided by Kobayashi (2006): Fan, M. Y. (2003). Frequency of use, perceived usefulness, and actual usefulness of second language vocabulary strategies: A study of Hong Kong learners. *The Modern Language Journal*, 87(2), 222-241.

proficient students often used both guessing and dictionary strategies, suggesting that both guessing and dictionary strategies are important for vocabulary learning. In contrast, the less proficient students used repetition and association strategies more often than the more proficient groups.

### Nesi (2003)

The author deals with EDs, more exactly with the “vocabulary notebooks” existing in some EDs. I quote: “This paper examines EAP students’ choices concerning the use of e-dictionaries for autonomous wordlist compilation. In particular it investigates the potential of the *Macmillan English Dictionary on CD-ROM* (MED), and compares it to Chinese bilingual dictionary software and pocket e-dictionaries.” And she explains how she proceeded:

To explore the potential of the MED I gave copies to two groups of EAP learners, and gathered information about their dictionary using habits during a ten week university term. One group consisted of 12 postgraduate students (Chinese (6), Japanese (3), Cypriot (1), Mexican (1) and Pakistani (1)), taking a one-year English course before continuing their studies in other disciplines. The other group consisted of 20 Chinese undergraduates in the third year of a 2+2 BA programme in Translation and British Cultural Studies. All 32 students were advanced learners, with considerable English language learning experience behind them.

All the students agreed to install the MED on their own personal computers. The key features were demonstrated to them in class, with opportunities for hands-on practice. [...]

After five weeks the students completed a questionnaire about their use of MED facilities and dictionaries in general.

Since the responses showed that the Chinese students often used pocket EDs (PEDs) and bilingual software, 14 of the Chinese undergraduates were asked to fill in another questionnaire about the features and use of these dictionaries.

#### Results:

- Preferences for types of dictionaries (the numbers refer to points given according to preference, decreasing from +2 to -2): BED (bilingual electronic dictionary) – 35; print BD – 15; MED (*MacMillan English Dictionary on CD-ROM*) – 8; print MD – 1.
- Use of facilities existing in MED: “Seven [respondents] claimed to have added notes to dictionary entries, eight to have created wordlists, and five to have used the flashcard facility.”
- Almost all 26 Chinese and 3 Japanese students used PEDs in class, consulting them every day.
- Some PEDs contain facilities comparable to those of the MED; in almost all of them there exist vocabulary tests and word games; however, the informants of the second questionnaire “were most enthusiastic about PED functions unrelated to language learning, [...] such as the calculator, calendar and telephone book, and they particularly liked the fact that their PEDs were easy to carry around”. But most of them “recognized their defects” and “acknowledged that the lexicographical content of the MED was superior”.
- 7 of the 20 undergraduates used daily an ED, or software, which they preferred to the MED, although they recognized that the MED offers “better explanations, more information and accurate pronunciation”. This ED (for which Nesi uses the acronym JSCB) “often comes free with computer purchases in China, and can also be downloaded from the Internet”; it is “an amalgam of over 30 sources”, *viz.* of technical dictionaries, several general BDs and a BD of idioms.
- Preferences for the MED, the JSCB and PEDs in various circumstances of use: while reading or writing at the computer, respondents preferred the MED and, in second place, the JSCB, but “a PED is preferred for reading and writing with paper-based materials, and for speaking and listening”.

### **Huang (2003)**

The main parts of the abstract of this master's dissertation read as follows (cf. <http://sunzi1.lib.hku.hk/ER/detail/hkul/2988630>):

[...] this study investigated Taiwanese university English majors' dictionary beliefs, their dictionary strategy use, the relationship between their dictionary beliefs and strategies, the effect of English proficiency on dictionary beliefs and strategies, and the relationships among these learner variables.

A total of 414 Taiwanese university English majors completed survey instruments developed for this study. Two major instruments were employed to assess the participants' dictionary beliefs and their dictionary strategies: (1) the Belief About English Dictionary Questionnaire (BAEDQ) and (2) the English Dictionary Strategy Questionnaire (EDSQ). To triangulate the quantitative data and clarify the contexts of students' dictionary use and their lookup behaviors, interviews were conducted with six proficient and six less proficient English students.

The quantitative results suggest that: (1) learners believed that using dictionaries was necessary to facilitate English learning, (2) learners used memory, metacognitive, general cognitive, and task-bound cognitive strategies widely for translation aid and conscious learning of vocabulary, (3) learners' dictionary beliefs were associated with their use of dictionary strategies, (4) high proficiency learners tended to use more effective or thoughtful dictionary strategies than low proficiency learners, (5) high proficiency learners tended to have stronger motivation for dictionary use, better lookup skills, and to consult more types of dictionaries and use more kinds of dictionary information.

### **Chow (2004)**

At <http://hub.hku.hk/handle/123456789/30634>, there is the following abstract:

This dissertation sets out to investigate the attitudes of a group of local F.6 students towards consulting bilingualized dictionaries. It examines the students' reference needs and the information checked. The participants' views on their own reference practice and dictionaries are also explored. The findings and information in the questionnaire and interviews show that secondary six students mostly use bilingualized dictionaries for reading and writing activities in their academic studies. It is revealed that the use of dictionary information is limited since this group of students mainly check L1 definitions, spelling and examples but seldom pay attention to pronunciation, collocation and usage of words. This can be attributed to their low awareness of different information and their little training on reference skills. On the whole, the subjects think highly of bilingualized dictionaries as a rich source of information and effective reference tool. Their comments on the strengths and weaknesses of bilingualized dictionaries, and suggestions for improvement throw light on how dictionaries can be better designed to cater for learners' needs and how the teaching of reference skills can be approached.

### **Conceição (2004)**

The informants of Conceição's research on vocabulary learning were 51 Brazilian university students attending an ESP course. Part 3 of her doctoral thesis deals with the

subjects' beliefs on vocabulary learning and dictionary use. These beliefs were investigated by means of a multiple-choice questionnaire.<sup>90</sup>

Adding up, on the one hand, the answers "I agree" and "I agree entirely" and, on the other, "I disagree" and "I disagree entirely", I present the main results of the three items related more directly to dictionary use.<sup>91</sup>

- In FL learning,
  - the dictionary should be used in reading: 76.5% agreed;
  - the dictionary does not help learning new words: 80% disagreed;
  - dictionary use is tiring: 62.7% agreed.
- In order to read better in English, students should use the following dictionary type:
  - English-Portuguese: 58.8% agreed;
  - English MD: 64.7% agreed;
  - any dictionary: most informants were indifferent or disagreed.<sup>92</sup>
- The best way to read in English is to:<sup>93</sup>
  - consult the dictionary as soon as an unknown word appears: 66.7% disagreed ;
  - infer the meaning of unknown words and check in the dictionary: 80.4% agreed;
  - use the context, not the dictionary: 62.7% disagreed.

Please see also Conceição (2004) and Conceição (2004a) in 4.4.

### **Lew (2004)**

In this book, the author provides a comprehensive report on a study briefly described in Lew (2002). Please see details above.

In chapter 4, Lew shows in great detail numerous data, frequently analyzed statistically. Apart from the results presented in Lew (2002), the following may be cited (as summarized in chapter 5):

The average Polish learner appears to be using a bilingual dictionary *a few times a week*. This holds for Polish-English as well as English-Polish dictionaries, though, as in Tomaszczyk (1979), it is the latter that are used somewhat more frequently. In contrast, monolingual dictionaries are used very rarely by learners at all levels except the highest. The more intensive use of monolingual dictionaries by most advanced learners is not accompanied by a decreased use of bilingual dictionaries; on the contrary, an increase in the frequency of use is observed in bilingual dictionaries at the highest proficiency level, though relatively speaking not as dramatic as for monolingual dictionaries. The patterns of frequency of use at different levels suggest that

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<sup>90</sup> In another part of her thesis, Conceição asserts (p. 128) that her subjects reported the following about the frequency of dictionary use in reading: never – 14%; seldom – 24%; sometimes – 39%; often – 14%; always – 10%. On p. 133 she shows the students' information on the instruction given by their teachers on how to proceed when they encounter an unknown word in a text: consult the dictionary immediately – 43%; pay attention to the context and the dictionary – 19.6%; consult the dictionary or ask the teacher – 19.6%; pay attention to the context – 5.9%; consult the dictionary and use other strategies – 5.9%; use other strategies and the dictionary – 3.9%.

<sup>91</sup> The author provides only the numbers of responses (p. 157ff.), but I have calculated the percentages.

<sup>92</sup> Due to the fact that the BD was preferred to the MD in the option "I agree entirely", the author remarks that this result confirms that of other studies, namely that the BD is preferred (p. 159). But when we add up "I agree" and "I agree entirely", the majority (64.7%) opted for the MD.

<sup>93</sup> I present only those answers that refer to dictionaries.

monolingual dictionaries at the highest level supplement bilingual dictionaries rather than supplanting them. (p. 175)

Only 9% of all responses gave monolingual dictionaries as their preferred dictionaries, with the remaining 91% of responses naming bilingual dictionaries. It was primarily highest-proficiency learners who named monolingual dictionaries. Further, monolingual dictionaries, if named at all, tend to have been given as second-choice rather than first-choice dictionaries, which confirms their secondary role for advanced students. (p. 176)

Another part of the study is described in 4.3.1.

### **Sánchez Ramos (2004a)**

In this article, the author reports on a survey which is apparently part of her doctoral research (Sánchez Ramos 2004).<sup>94</sup> She wanted to “gather information about dictionary use [...]” and “know the trainee translators’ attitudes towards the different reference tools [...].” She administered a 39-item questionnaire to 98 Spanish “translation students at University Jaume I (Castellon, Spain)”, who were in their first or second year.<sup>95</sup>

Results:

- Type of dictionary used:

	BD	English MD	Spanish MD
Average of all informants	87.8%	10.2%	2%
First-year students	91.8%	8.2%	0%
Second-year students	83.7%	12.2%	4.1%

- Use of appendices and introductions:

	BD	English MD	Spanish MD
List of abbreviations	31.6%	28.6%	2%
Irregular verbs	28.6%	30.6%	0%
Grammatical information	30.6%	30.6%	37.8%

- Frequency of use<sup>96</sup> – first-year students:

	BD	Engolis MD	Spanish MD
every day	70.8%	26.5%	40.8%
2 or 3 times a day	16.7%	8.2%	4.1%
once a week	12.7%	51%	42.9%
less	0%	13.3%	12.2%

- Frequency of use – second-year students:

	BD	Engolis MD	Spanish MD
every day	59.2%	20.4%	36.7%
2 or 3 times a day	6.1%	6.1%	4.1%
once a week	28.6%	49%	44.9%
less	6.1%	24.5%	14.3%

<sup>94</sup> In note 4, she asserts that the complete questionnaire “can be obtained from Sánchez Ramos (2004)”.

<sup>95</sup> The author omits the fact that the students’ FL was English.

<sup>96</sup> The percentages concerning Spanish MDs – as presented in the two following tables – are not in keeping with those of the first table, according to which Spanish MDs were used very seldom. consistent

▪ Circumstances of use:

	BD	Engolis MD	Spanish MD
Writing	17.3%	26.5%	38.8%
Reading	33.7%	28.6%	25.5%
Listening	1%	---	---
Speaking	---	1%	3.1%
L2-L1 Translation	44.9%	41.8%	2%
L1-L2 Translation	3.1%	2%	27.6%

- Information types most looked for:
  - in the BD: equivalents – 80.6%; spelling – 25.5%; examples – 18.4%;
  - in the English MD: definitions – 74.5%; spelling – 22.4%;
  - in the Spanish MD: definitions – 60.2%; spelling – 30.6%; usage labels – 33.7%.
- Difficulties of use when looking up words:
  - Respondents do not find the words looked for – 31.6%;
  - It is difficult to find the specific information looked for – 32.7%;
  - Respondents do not understand the definitions – 26.5%.
- Reasons for difficulties:
  - deficiencies of the dictionary: 45.9%;
  - lack of familiarity with the dictionary – 25.5%;
  - lack of dictionary skills – 12.2%;
  - unclear layout of the dictionary – 12.2%.
- Instructions in dictionary use: 45.9% had not received any; only 2% of the remaining informants had received “exhaustive instruction”.
- Electronic reference tools:
  - Did not know dictionaries on CD-ROM: BD – 70.4%; English MD – 78.6%; Spanish MD – 60.2%.
  - Knew online dictionaries: BD – 61.2%; English MD – 41.8%; Spanish MD – 64.3%.
  - Considered themselves as good users: 4.1%. (Probably this result refers to EDs only.)
  - Advantages of EDs: “quick access, accessibility, and usefulness”.
  - Disadvantage of EDs: “lack of skills in using online dictionaries”, i.e. it is necessary to learn how to use them.

### **Kobayashi (2005, 2006)**

In these reports, the author presents the results of a questionnaire survey of the use of PEDs in Japan. Please see Section 6.2.

### **Muráth (2005)**

The author reports on a survey undertaken between 1999 and 2001 at the Faculty of Economic Sciences of a Hungarian university. She wanted to investigate how dictionaries are used by students of Translation (in the field of Economy), but included an even greater number of other students. She administered a questionnaire to 164 students of Economic Sciences (group E) and to 30 informants who were studying not only Economics but also Translation of Economic Texts (group T). Those of group E were attending a course of Economic German and those of group T were learning how to translate economic texts between Hungarian and German. Each group filled in a slightly different version of the

questionnaire. 20 students of group T and 44 of group E answered two more (open-ended) questions concerning criticisms and expectations.

The percentages shown below are based on totally different absolute numbers (164 in group E, 30 in group T).

Results (in percentages):

▪ Frequency of use:

	Common BDs		Common MDs		Economics MDs	
	Group T	Group E	Group T	Group E	Group T	Group E
Often	83	81	46	6	50	6
Seldom	17	17	27	18	43	30
Never	0	2	20	48	7	25

▪ Types of information most looked for:<sup>97</sup>

	Group T	
	in L2-L1 translation	in L1-L2 translation
equivalent	96	90
synonyms	52	70
collocations	50	70
grammatical information	50	73
spelling	32	46
others	10	11

	Group E
equivalent	90
synonyms	38
spelling	36
grammatical information	34
collocations	16
pronunciation	6
others	5

▪ Types of information respondents want to obtain in a specialized dictionary:

	Group T (20 informants)	Group E (44 informants)
examples/context	55	48
explanations of the lemmas	55	16
synonyms	35	25
technical terms	30	36
equivalents	10	16
antonyms	5	0

<sup>97</sup> Unfortunately Muráth does not differentiate types of dictionaries in this item.

### **Teixeira (2005)**

A pilot questionnaire was administered to 130 Brazilian school children, aged 10-14. After data analysis, the questionnaire was improved and the new version was filled in by 156 pupils of the same age. All of them were learning Spanish and used BDs.

Teixeira presents the results of the two questionnaires separately, but then joins them in graphics. These are the overall findings:

- Main reasons for choosing a certain dictionary: (large) number of entries – 40%; it is recommended by the bookseller – 30%; (low) price – 20%.
- The BD is used in the Spanish class: yes – 98%; no – 2%.
- Frequency of use: often – 60%; sometimes – 35%; seldom – 5%.
- Circumstances of use: reading (in Spanish) – 60%; writing exercises – 40%.
- The need to use a BD is perceived: in writing exercises – 40%; in reading – 30%; in text production – 15%; in oral exercises – 10%.
- Information looked for in the BD: equivalents – 80%; spelling – 20%.
- Causes for not finding a word looked for (in the respondents' opinion, of course): the word does not exist – 23%; the BD is not good – 18%; they did not know how to find it – 12%. 47% said this means that there may exist an equivalent word.
- Informants would like the BD to contain: more entries – 35%; slang words – 25%; examples – 16%; dialogues – 10%; drawings – 8%. For 6%, nothing is lacking.

The author applied an L2-L1 translation test too, but she does not provide any numerical results, commenting only on the look-ups and translation of certain words.

### **Höfling (2006)**

According to the title of this doctoral thesis, this Brazilian author wanted to establish a profile of dictionary users, particularly Brazilian university students majoring in English. The main instrument of her research was a survey. Höfling describes in great detail how the questionnaire was designed and how the informants were selected. After piloting the questionnaire several times, the final version – in which the questions were grouped into three sections – was administered to 197 students at three Brazilian universities. They were at different levels of their major course of study (English). In order to make comparisons easier, only 50 randomly selected questionnaires from each university were analysed. Thus the results are based on the responses of 150 informants. Each of the four years of the course was represented more or less equally.

Main findings from the second section, on dictionary use, which consisted of 25 questions:<sup>98</sup>

- Ownership: BDs and MLDs – 40%; BDs – 31%; MLDs - 21%; none – 8%.
- Recommendation of purchase: teacher recommended it – 71%; student asked teacher's opinion –
- Use of BDs and MLDs: BDs – 93%; MLDs (i.e. MLDs) – 51% (LDOCE – 20.7%; OALD – 16.7%; *Cambridge Advanced Learner's Dictionary* – 10.7%).
- 59% had used MLDs and BDs together. Usually they consulted first the MLD, then checked in the BD whether they had understood the information correctly.

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<sup>98</sup> Since practically all MDs owned and used by the respondents are MLDs, I will use the acronym MLD, although Höfling mostly uses the expression “monolingual dictionary”.

- 71% were satisfied with their dictionary.
- Main external positive aspects (Höfling does not present percentages):
  - BDs: (1) practical format; easy to consult; (2) quick finding of information.
  - MLDs: (1) illustrations, figures, tables, boxes with explanations; (2) index; (3) coloured text; (4) hyphenation.
- Main deficiency of BDs and MLDs: small typeface.
- Evaluation of the dictionaries' content:
  - Qualities of BDs: consultation is rapid;
  - Qualities of MLDs: examples; complete definitions in simple language; grammatical information.
  - Deficiencies of BDs: insufficient number of entries and idioms; lack of examples and of notes on culture and usage; problematic phonetic transcription (not using the IPA).
  - Deficiencies of MLDs: complex unclear definitions; difficulty finding the desired sense of a polysemous word.
- Main reasons for preferring BDs or MLDs:
  - BD: the definition (synonymic definition, i.e. equivalent) is clear – 16%; examples are clear – 13%; entry contains useful grammatical information – 13%.
  - MLD: the definition is complete – 18%; the entry contains examples – 16%; the definition is clear – 15%;
- (In the questionnaire there were copies of two entries (one from LDOCE and one from an LDT); subjects were asked to choose the correct term for seven information types and for *entry*.) Number of terms indicated correctly: 8 – 14%; 7 – 3%; 6 – 33%; 5 – 16%; between 4 and 1 – 22%; none – 12%;
- Information types considered fundamental (in decreasing order): definition/meaning; phonetic transcription; examples; translation (i.e. equivalent); grammatical information; usage notes; idioms. Not very important: irregular verbs; illustrations/tables; cross-references. Phonetic transcription was considered fundamental by 97%, but it was used only by 54%. 94% considered examples important and claimed they read them.
- Frequency of use in several circumstances (I show only the sum of “always” and “regularly”):
  - Translation: BD – 76%; MLD – 31%.
  - Writing: BD – 33%; MLD – 44%.
  - Reading: BD – 60%; MLD – 33%.
  - Listening: BD – 40%; MLD – 18%.
  - Preparation for oral presentation: BD – 53%; MLD – 30%.
  - Preparation for class: BD – 56%; MLD – 34%.
- Information types most looked for (in decreasing order):
  - BD: spelling; explanation of meaning<sup>99</sup>; equivalent; grammatical information; examples; information on usage.
  - MLD: information on usage; examples; spelling; pronunciation; explanation of meaning; grammatical information;
- Frequency with which a word is not found:
  - BD: often – 20%; sometimes – 63%; seldom – 13%; never – 4%.
  - MLD: often – 6%; sometimes – 39%; seldom – 29%; never – 26%;
- Reading of introduction: yes – 60%; no – 40%.
- Received training in dictionary use: yes – 31%; no – 56%; do not remember – 13%.

Very positive aspects of this survey are the distinction between BDs and MLDs and the large number of questions.

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<sup>99</sup> Höfling remarks that BDs normally do not contain explanations and that apparently many respondents look for information types (explanation of meaning, examples, notes on usage) which do not exist in BDs (p. 214f.)

Höfling included a third part in her questionnaire. However, it is not a survey of opinions and attitudes, but a reading test, since subjects were asked to read a text and answer questions on the content. That part is described in 3.2

### **Vital (2006)**

In this master's dissertation, the author, apart from dealing with lexical competence and dictionary use and analyzing three English-Portuguese/Portuguese-English BDs, reports a study in which she asked 361 Brazilian elementary and high school students to answer a questionnaire; another questionnaire was submitted to Brazilian teachers of English, whose number is not revealed.

General results (as summarized by Vital on p. 133):

- Students usually purchase a dictionary when it is used in class activities.
- Less than a one third of the learners received some instruction on dictionary use.
- The dictionary (BD) is consulted rather infrequently, generally at the teacher's suggestion.
- Information types sought mostly: meaning and spelling.
- Major difficulties during consultations: locating the word to be looked up and choosing the correct sense.

In the abstract, the author reveals two more pieces of data: "Although 82% [of the teachers] agreed that dictionaries can help to improve English language teaching, only 12% said that they had already developed some activity using dictionaries."

### **Xu (2006)**

The author wanted "to investigate Chinese EFL learners' needs for illustrative examples" (p. 158). His informants were 367 Chinese university students. Most of them used OALD (41.21%), LDOCE (21.31%) or EDs (21.67%).

Main findings concerning examples:

- Frequency of reading of examples: sometimes – 37%; frequently – 34%; at each consultation – 27%.
- Main reasons for reading examples: looking for information on some collocation or on how to use a certain lexical item – 36.09%; wishing to understand the meaning better (after having read the definition or equivalent) – 16.17%;
- Evaluation of the examples' usefulness: extremely useful – 57%; useful – 40%.
- Preference for sentence examples (= a) or for phrasal examples (= b): 46.96% liked both types, but preferred type (a); 20.72% liked both types, but preferred type (b); 18.23% preferred (a); 8.84% preferred (b); 5.25% did not care.
- Most frequent reasons for preferring sentence examples: they show collocations or word usage more clearly – 16.48%; they provide a concrete context, being informative and vivid – 15.10%; they show word meaning more clearly – 13.27%.
- Most frequent reason for preferring phrasal examples: they are brief, clear, and highlight a collocation – 13.27%.
- Main types of words that should be exemplified: verbs, phrasal verbs – 21.71%; polysemous words – 11.62%; ambiguous or confusing words – 10.86%.
- Most frequent suggestions for examples: they "should be practical, natural and close to life" – 27.62%; they "should be typical, representative and classic" – 9.39%; they "should be in current usage and updated frequently" – 9.12%.

### **Bettoni-Techio & Humblé (2007)**

Since Brazilian EFL students seem to have difficulties with the interpretation of phonetic symbols, the authors wanted to investigate whether Brazilian EFL teachers usually explain these symbols, whether they had been instructed to do so and whether they themselves could interpret them. The questionnaire contained some items on the use of pronunciation recordings in EDs as well. The respondents were 16 teachers.

Main findings:

- Only half of the teachers had received instruction on the interpretation of phonetic symbols.
- Only 6 of the 16 teachers teach phonetic symbols to their students “always” or “sometimes”.
- In five questions regarding the interpretation of such symbols, only between 5 and 11 teachers provided correct responses.
- 10 subjects seldom or never used an ED to hear a word pronounced.

### **Boonmoh & Nesi (2007)**

This article reports on a questionnaire survey of dictionary use in Thailand. The authors explain the situation:

Although English is a compulsory subject in Thailand at every level of education, there are relatively few opportunities to use English outside the classroom, and by the time they enter university many students have only acquired a small stock of English words. At King Mongkut's University of Technology Thonburi (KMUTT) the official response to this problem has been to encourage undergraduates to buy the *Longman Active Study Dictionary* (LASD). This is used as the key text in dictionary skills training courses, and is the only dictionary students are allowed to use in the final examinations. When left to their own devices, however, many students seem to prefer to use pocket electronic dictionaries (PEDs) instead of LASD. PED use places the KMUTT English staff at something of a disadvantage, because they know little about PED contents and capabilities, and are unsure about the extent to which paper-based dictionary skills apply. (p. 80 f.)

Boonmoh & Nesi wanted to survey “both teachers’ and students’ general use of dictionaries, and knowledge of pocket electronic dictionaries (PEDs)”. The informants were 30 experienced lecturers of English at KMUTT and 1,211 first-year non-English major students who also studied at KMUTT. After describing the PEDs available in Thailand, the authors first show the results of a questionnaire filled in by the 30 lecturers (and comment on them):

- Ownership of types of dictionaries (total numbers): print MDs – 29; MDs on CD-ROM – 22; BDs online – 11; print BDs – 10; MDs online – 9; PEDs – 4.
- Types of dictionaries used:
  - in reading: print MD – 20; MD on CD-ROM – 8; MD online – 3; print BD – 2; PED – 2
  - in writing: print MD – 23; MD on CD-ROM – 7; print BD – 1; MD online – 0; PED – 0.
- Knowledge of and attitudes toward PEDs: 20 teachers “had no idea how many dictionaries a PED might contain”; even those “who owned PEDs had little idea about their lexicographical content”; “most staff rejected the idea of PEDs, and expressed little faith in the quality of their contents”; they “were highly critical of the PED as a tool for students, and many referred to the inadequacy of the dictionary information it provides”; but “some of the staff criticisms seem to suggest bad practice or lack of skill on the part of students, rather than inadequacies on the part of PEDs”.

As to the 1,211 students, “580 were taking ‘Fundamental English III’ in the first semester of the academic year, and 631 were taking ‘Fundamental English II’ in the second semester of the academic year”. They were “selected to represent every department in all three faculties at KMUTT”.

Main results of the students’ questionnaire:

- Ownership of types of dictionaries: print MDs – 82%; print BDs – 45%; PEDs – 40%; MDs on CD-ROM – 28%; MDs online – 24%; BDs online – 14%.
- Types of dictionaries used:
  - in reading: print BD – 43.3%; PED – 35.9%; print MD – 3.8%; MD on CD-ROM – 0.8%; BD online – 0.2%; MD online – 0.08%.
  - in writing: print BD – 41.5%; PED – 34%; print MD – 8.4%; MD on CD-ROM – 2%; BD online – 0.6%; MD online – 0.2%.
- Preferences for dictionary purchase (if students were to buy a new dictionary): PED – 67.5%; print BD – 14.6%; print MD – 7.3%; MD on CD-ROM – 0.9%; BD online – 0.2%; MD online – 0.08%.

These results indicate that even though PEDs come in only in third place as to ownership (40%) and in second place with respect to most frequent use, respondents would prefer them if they were to buy a new dictionary, even though they are “considerably more expensive than print dictionaries”. As to the teachers, Boonmoh & Nesi conclude:

Our survey suggests that English lecturers in Thailand are under-informed about the contents and capabilities of popular Thai PEDs. The two main PED companies in Thailand license lexicographical content from respected dictionary publishers, but in most cases the English lecturers reject PED use out of hand, and do not encourage students to make the best use of a tool that could be more valuable to them than the print-based bilingual dictionaries that they will otherwise turn to. (p. 89)

### **Costa (2007)**

The author reports a study carried out in a Brazilian private school. Two questionnaires were administered: one to obtain information on the use of Portuguese – i.e. L1 – dictionaries (42 informants = group L1) and the other on the use of FL dictionaries (47 informants = group FL). All 89 students were aged 13-14. Their FL was English. In their school, the use of dictionaries was allowed, except in examinations. Students were encouraged to carry their dictionaries with them. In the Portuguese (L1) classes, vocabulary exercises were done once a week, and the pupils were encouraged to consult dictionaries to find the needed information.

Almost the same questionnaire was administered to each group, but in the FL group there were four more questions (about learning English outside school).

Main results:

- Use of types of dictionaries (both groups): FLD<sup>100</sup> – 45%; L1D<sup>101</sup> – 44%; FLD and L1D – 7%; no response – 5%.

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<sup>100</sup> FLD = a dictionary in which the lemmas are in the FL; it may be (and here probably is) a BD, or else an MD.

<sup>101</sup> In this case, the L1D is probably not a general dictionary, but an L1 school dictionary.

- Dictionary use (in both groups) is encouraged by: L1 teacher – 57%; parents and grandparents – 55%; FL teacher of another school – 26%; FL teacher of their school – 25%; teacher of another subject – 9%.
- Preference for dictionary type in FL group: BD – 55%; English MD – 36%; both – 2%; no response – 6%.
- Frequency of use:
  - L1D: daily – 2%; once or several times per week – 47%; once or twice per month – 35%.
  - FLD: daily – 13%; once or several times per week – 27%; once or twice per month – 32%.
- Format of dictionary used (print or electronic): print – 80%; electronic – 12% (FLD – 17%; L1D – 7%); both – 6%.
- Information looked for:
  - L1D: meaning – 100%; spelling – 64%; syntactic information – 13%; examples – 10%; origin – 10%; pronunciation – 7%; synonyms – 2%.
  - FLD: equivalent – 66%; spelling – 57%; meaning – 43%; syntactic information – 13%; examples – 9%.<sup>102</sup>
- Circumstances of use:
  - L1D: writing – 64%; reading – 62%; doing homework – 60%; in class – 24%.
  - FLD: writing – 53%; reading – 45%; doing homework – 34%; in class – 13%.
- In case of lexical doubts, respondents do the following:
  - L1 group: ask the teacher – 45%; ask parents – 43%; consult a dictionary – 40%; ask colleagues – 31%; guess by context – 26%.
  - FL group: ask the teacher – 64%; consult a dictionary – 57%; ask colleagues – 43%; guess by context – 36%; ask parents – 29%.
- The dictionary helps:
  - L1D: always – 36%; sometimes – 62%; no response – 2%.
  - FLD: always – 38%; sometimes – 40%; no response – 21%.
- Use of more than one dictionary for solving just one problem: L1 group – 43%; FL group – 11%.

## Oliveira & Welker (2007)

The authors report on a survey of the use of dictionaries by Brazilian undergraduate Translation students. The informants were 20 students of the first four semesters (mostly of the second) and 20 students of the sixth to ninth semester. The aim was to discover whether changes occurred in dictionary use during the Translation course. Replies to many questions were virtually identical among the two groups but in some a change was observable: more advanced students (group A) own more dictionaries, and appear to consult them more frequently besides being more aware of the limitations than beginners (group B).

The FL of 33 students was English, while seven in group B had chosen French.

Main results (in absolute numbers):

- Ownership of more than five dictionaries: B – 6; A – 15.
- Use of dictionaries in more than 50% of a translation task:
  - L2-L1 translation: B – 5; A – 5.      L1-L2 translation: B – 8; A – 14.
- In L2-L1 translation, students use always an FL MD: B – 9; A – 10.
- In L2-L1 translation, students use always a BD: B – 8; A – 13.
- In L1-L2 translation, students use always an FL MD: B – 7; A – 14.

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<sup>102</sup> Costa, noticing that 43% indicated “meaning” (which is given by the equivalent) and that some students must have marked both “equivalent” and “meaning”, explains that these may have wanted to know not only the general meaning of the word looked up, but also an appropriate equivalent.

- In L1-L2 translation, students use always a BD: B – 10; A – 15.
- The information obtained in a BD is always checked in an FL MD: B – 3; A – 8.
- In L2-L1 translation, respondents do not use only BDs or FL MDs: B – 9; A – 17.
- Types of dictionaries – apart from BDs and FL MDs – used in L2-L1 translation:
  - B: specialized dictionaries – 4; of idioms – 4; of phrasal verbs – 1; thesaurus – 1.
  - A: dictionaries of collocations – 8; of synonyms – 6; specialized – 6; thesaurus – 6; of idioms – 2; of phrasal verbs – 1.
- In L2-L1 translation, a dictionary is used in each paragraph:
  - BD: B – 5; A – 8.
  - FL MD: B – 4; A – 5.
- In L1-L2 translation, a dictionary is used in each paragraph:
  - BD: B – 5; A – 6.
  - FL MD: B – 4; A – 10.
- Main information categories looked for in various types of dictionaries:
  - BD<sub>L2-L1</sub>: B – equivalents (11), synonyms (8), spelling (4); A – equivalents (15), synonyms (8), collocations (5).
  - BD<sub>L1-L2</sub>: B – equivalents (15), synonyms (8), collocations (3); A – equivalents (16), synonyms (8), collocations (6).
  - FL MD: B – definition (15), synonyms (9), collocations (5); A – definition (17), synonyms (10), collocations (9).
  - L1D: B – definition (13), synonyms (11); A – definition (13), synonyms (13).
- Respondents read the whole entry: B – 18; A – 20.
- In consultations, the context is taken into account: B – 20; A – 20.
- Students complain mostly about the lack of: B – examples (5); A – context (4), examples (8).
- The dictionary helps in more than half of consultations: B – 18; A – 3.
- Frequent use of dictionaries, internet and parallel texts (the numbers before and after the slash indicate respondents of group B and group A respectively): print BDs (16 / 18); EDs (18 / 16); internet (18 / 20); parallel texts (3 / 8).
- The dictionary is essential in translation: B – 17; A – 16.

The authors conclude that the more advanced of the surveyed translation students own and use more dictionaries, and use them more frequently than the less advanced, but that they are also more aware of the dictionaries' limitations.

### **Ekwa Ebanéga & Tomba Moussavou (2008)**

An abstract of this paper is available at the site of the South African journal *Lexikos* (<http://www.wat.co.za/lexikos/lex18Abstracts.pdf>):

This article presents a preliminary study on Gabonese users' knowledge, opinions, attitudes and habits of the use of dictionaries, and their dictionary culture. It is based on the principle that the lexicographer should know the target users and their needs [...]. The aim of the article is to present and discuss research findings of a lexicographic survey conducted among 100 Gabonese students at the University of Stellenbosch and the Cape Peninsula University of Technology with regard to dictionary use and culture. In this article, we discuss the objective of the research, the research subjects, the research methods, the research coverage, the research findings, the description and the critical analysis of the data.

### **Petrylaitė, Vaškelienė & Vėžytė (2008)**

The authors carried out a survey among 88 ESP students at the Faculty of Informatics in Kaunas (Lithuania). They wanted to discover the informants' "habits and preferences in dictionary use" (p. 79). "The questions were mostly multiple choice ones, the number of choices ranging from 3 to 8 [...]." (p. 80)

Main results:

- Dictionaries owned: BDs – 80/88; English MDs – 27/88; specialized dictionaries – 10/88; "thesaurus type" dictionaries – 7/88; encyclopedias – 6/88.
- Dictionaries most frequently used: print BDs – 65/88; BEDs – 69/88; print English MDs – 7/88; electronic English MDs – 55/88.
- Opinions about advantages of print dictionaries: the majority of students indicated portability as the only advantage.
- Advantages of EDs: quick search – 100%; easy to use – 71/88; great variety of EDs on the internet – 53/88; free of charge – 45/88; possibility to download updates – 15/88.
- Frequency of use: 3 or 4 times a week – 45/88; once a week – 26/88; every day – 11/88.
- Type of information sought most: meaning – 82/88; spelling – 30/88; grammar – 19/88; usage – 17/88; phrasal verbs – 14/88.
- Kinds of problems encountered when consulting English MLDs: unclear definition – 51/88; "word-combination is not given" – 27/88; "information I need is not given" – 25/88; too long entry – 21/88; the word to be looked up is missing – 16/88; "examples are not helpful" – 15/88.
- Reasons for difficulties: "unclear layout of the dictionary" – 27/88; "lack of familiarity with the dictionary" – 24/88; "lack of dictionary skills" – 19/88.
- Instruction received on dictionary use: on print dictionaries – 52%; on EDs – 41%.
- Would instruction on dictionary use be beneficial? Yes – 30%; no – 26%; no opinion – 44%.

### **Ronald & Ozawa (2008)**

The abstract of this report is to be found at [http://hypermedia.ids-mannheim.de/pls/lexpublic/bib\\_en.eintrag?v\\_id=215&v\\_bereich=OBELEX](http://hypermedia.ids-mannheim.de/pls/lexpublic/bib_en.eintrag?v_id=215&v_bereich=OBELEX):

The pocket electronic dictionary (PED) has the potential to be a powerful language learning tool. At the same time, it may be seen as an obstacle to communication, a waste of classroom time, and a source of conflict between foreign-language learners and the teachers. This presentation will report an in-depth survey of three sets of people influenced by the widespread presence and use of the PED in the classroom: foreign-language students, teachers who share the native language of the students, and teachers who are native speakers of the target language. The survey, which takes into account the beliefs, attitudes, and expectations of Japanese learners of English and of their teachers regarding the PED, revealed important differences in their opinions about how and when the dictionary should be used, in the effect of dictionary use on foreign language vocabulary development, and regarding users' needs for training or guidance in the use of electronic dictionaries. The presentation will also recommend means by which understanding of these differing perspectives may help both language learners and teachers make the most of the potential of the electronic dictionary.

### **Koplenig & Töpel (2010)**

A report of the study described in this paper is available at the link "First Study", at <http://www.ids-mannheim.de/lexik/BZVelexiko/UsingDictionaries/>.

### That “first study”

investigated the reasons for using online dictionaries and tried to identify both the social situations in which online dictionaries are being consulted and different user demands. Almost 700 respondents participated in the bilingual survey (German / English).

### **Loucky (2010)**

The abstract is available at <https://www.calico.org/a-837-Comparing%20Electronic%20Dictionary%20Functions%20and%20Use.html>. Here is the part concerning the empirical study:

This study presents a descriptive survey of Japanese freshmen students' use of various electronic dictionaries, a brief survey of graduate students' use of online dictionary, reading and vocabulary sites, and a comparison with other research studies investigating learners' degree of use of EDs. Many overall trends are clearly discernable by comparing these findings that can help us improve language learning by means of more precise and effective guidance and recommendations concerning the use of EDs.

### **Müller-Spitzer (2010)**

In her paper entitled “Social situations of dictionary use”, the author analyses consultations in online dictionaries. Please see a description of a so-called “First Study” at <http://www.ids-mannheim.de/lexik/BZVlexiko/UsingDictionaries/>.

### That “first study”

investigated the reasons for using online dictionaries and tried to identify both the social situations in which online dictionaries are being consulted and different user demands. Almost 700 respondents participated in the bilingual survey (German / English).

### **Frankenberg-Garcia (forthcoming)**

The following abstract was kindly sent to me by Robert Lew, editor of a Special Issue on Dictionary Use (to be published in 2011) of the *International Journal of Lexicography*:

Current research shows that learners use dictionaries mainly to look up meanings, and generally prefer bilingual over monolingual look-ups. Despite the remarkable advances that have taken place in pedagogical lexicography over the past decades, many features of monolingual learners' dictionaries remain underexploited. Based on the premise that these dictionaries tend to be underused primarily because learners are insufficiently aware of their reference needs, this exploratory study examines what resources a group of 211 non-native speakers of English would choose to use when confronted with the demand to look up other types of linguistic information, beyond L1-L2 equivalents. The results suggest that reference preferences can change dramatically under these circumstances (the bilingual dictionary no longer being a favourite), and that learners do not know where to look up much of the information they need.

### 3. Studies of actual dictionary use

This chapter's title does not really make it clear what will be dealt with here. The title should actually continue like this: "but not on the *effects* of dictionary use". In fact, the investigations brought together in this chapter are different, on the one hand, from questionnaire surveys (chapter 2), in which informants make certain assertions or express opinions, and, on the other hand, from research which, when well conducted, reveals the *effects* of dictionary use (chapter 4).

Thus, in this chapter, I summarize reports of investigations on the ways subjects consult dictionaries. Such research may have been carried out in various ways: through protocols ("embedded", retrospective, written, or oral), observation or tests.

In the tests, contrary to those administered in studies on the effects of dictionary use, no comparisons are made between use and non-use (or use of different dictionaries); the researcher only wants to find out in which ways, or with what proficiency, dictionaries are consulted. As a matter of fact, in several such investigations consultations were indeed evaluated, successful ones being distinguished from unsuccessful or partially successful ones, but not the *effect on the task* during which the dictionary was used.

As was said in Section 1.4.2, some authors cite studies on reference skills without differentiating the methods employed. Of course, there is a big difference between a questionnaire in which the informants describe how they would look for certain information (cf., in 2.2., question 19 in Béjoint 1981) and a study in which *actual* consultations are described.

Research on actual use of certain types of print dictionaries and of specific components, e.g. definitions or examples (cf. 5.1.1, 5.2.1), and of electronic dictionaries (cf. Chapter 6), is not included in this chapter.

The following studies investigated actual use of L1 dictionaries by native speakers: Turkish (1972), Descamps & Vaunaize (1983), Mitchell (1983), Jorgensen (1984) (cf. 5.1.1), Miller & Gildea (1984, 1987), Blachowicz et al. (1990), Azorín Fernández (2007).<sup>103</sup>

There is one investigation that was considered by Ronald (2003: 286 ff.) a "very early study focusing on foreign vocabulary acquisition through dictionary use", *viz.*, Grinstead (1915). I will not summarize it here, because, although dictionaries were used, the author did not study their use, since he was interested only in the effect of context on word retention.

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<sup>103</sup> The term *L1 dictionaries* includes L1Ds (general L1 dictionaries), L1SDs (L1 school dictionaries), and specialized L1 dictionaries.

### Turkish (1972)<sup>104</sup>

[Lew (2004: 43)]

To my knowledge, this PhD thesis has been mentioned only by Lew, who cites it among studies on reference skills. Unfortunately he does not provide any other information. The title seems to indicate that the subjects were native speakers of English using L1Ds (probably school dictionaries).

### Ard (1982)

The theme of Ard's study is clearly indicated in the title: "The Use of Bilingual Dictionaries by ESL Students while Writing".

After discussing the advantages and disadvantages of BDs, he addresses "actual use" and asserts that a "series of studies was conducted [...] to determine how and how successfully students actually use bilingual dictionaries". The data were "i) retrospections by the students themselves, ii) in-class compositions in which bilingual dictionaries were consulted, and iii) students' oral protocols while writing" (p. 8). The author shows some sentences written by Japanese and Spanish students in which the words that had been looked up were highlighted. He makes some comments and expresses his opinion about the reasons why the look-ups had been successful or unsuccessful. He also talks about lexical typology and remarks that Spanish is much closer to English than Japanese is.

In the last part of his article (p. 13 ff.), he turns "to data taken from protocols of ESL writers" and provides the following description:

In the study reported on this paper two student volunteers, one Japanese female and one Arabic-speaking male, wrote a short composition and simultaneously orally described what they were doing. Their protocols were video-recorded: their oral comments were recorded while a TV camera focussed on the page they were writing upon [...] (p. 13).

Ard acknowledges that protocols "give information only about students' conscious awareness of their reasoning [...], they clearly give no direct information about why the students erred while composing" (p. 14).

Of the two subjects, only the Japanese student – who was accustomed to consulting BDs – used a BD, while the Arab-speaking student did not use any dictionary.

Regarding the Japanese BD user, the author makes the following statements (p. 14 f.):

[...] bilingual dictionary use often leads to errors.  
[...] the use of a [BD] involves a considerable expenditure of time. [...] However, [the Japanese student] made frequent pauses elsewhere in places where she was not looking up words [...]  
[...] it is impossible to say that the use of a bilingual dictionary had any major effect on the quality of her composition or upon her composing process.

About the other subject, Ard asserts (p. 16):

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<sup>104</sup> Bibliographical data according to Lew: Turkish, Marion P. 1972. A study of dictionary skills used by pupils in grades four, five, and six. Ph.D. diss., Fordham University.

Even though he did not use a bilingual dictionary [...] his protocol indicates that lexical choice in Arabic affects his lexical choice in English. [...] Thus, the absence of a bilingual dictionary in no wise eliminates lexical errors.

Since the author did not measure the influence of BD use on the writing task, his report is summarized here, not in Sub-chapter 4.2.

In his conclusion, he makes, based on his “analyses”, the following generalizations (p. 16 f.):

- 1) The use of bilingual dictionaries frequently leads to errors of certain types. 2) These types are understandable given language differences and the nature of existing bilingual dictionaries. 3) Errors of similar types occur even when bilingual dictionaries are not consulted, though in general not so frequently. 4) Different difficulties in bilingual dictionary use present themselves for different groups of speakers.

Ard's study is summarized briefly, for example, in Hartmann (1987: 24, 26), Ripfel & Wiegand (1988: 499), Diab (1990: 33 f.), Stark (1999: 50), Tono (2001: 34) and Thumb (2004: 11 f.), and with much detail in Nesi (2000: 33 ff.). Only Thumb remarks that due to the “limited scope” of the investigation, the results should not be generalized.

### **Descamps & Vaunaize (1983)**

Please see the details of this study in Section 2.2.

Apart from administering a questionnaire, the authors asked their informants to keep “notebooks of dictionary use”, writing down details of their consultations of L1 dictionaries at home every day during one month. In the notebooks, which had been given to the subjects, there was a table with six columns, in which the following information was to be recorded: title and year of publication of the dictionary, date of consultation, word looked up, information looked for, circumstance of use, information obtained (and, if the consultation was unsatisfactory, reason for dissatisfaction). Fifty-nine French users returned the notebooks, which, however, were filled in only “more or less” (p. 93).

Main results (p. 102 ff.):

- The readiness to keep notebooks was different among the 4 groups of informants (the percentages are based on the numbers of subjects in each group): teachers – 79%; middle or high level professionals – 67%; women with no profession – 38%; people with few qualifications – 26%.
- Number of words looked up: more than 12 – 10% (of 59 subjects); 12 – 20%; the other subjects consulted dictionaries less (15% looked up only 3 words). Teachers noted down 8 consultations on average.
- Classes of the 449 words looked up: nouns – 55%; proper names – 20%; verbs – 13.3%; adjectives or past participles – 8.7%; others – 3%.
- Dictionaries consulted and information looked for: insufficient data.
- Circumstances of use in which 427 of 449 words were looked up (according to the authors' classification): decoding – 56%; decoding and encoding – 26%; encoding – 13%.
- Reasons for dissatisfaction (of which the authors do not show data): contradictions between different dictionaries; circular definitions; cross-references; lack of common words and phrases; incomplete definitions; lack of antiquated words.

Problems with this part of Descamps & Vaunaize's study: the notebooks were filled in at home, so that correctness is guaranteed less than if the task had been supervised; only 23 subjects had noted down the consultations of more than 10 words, and in some information categories no secure data were obtained.

### **Mitchell (1983)**

[Hartmann (1987: 15), Ripfel & Wiegand (1988: 505 f.), Béjoint (1994 [2000: 162], Nesi & Meara (1994: 3 f.), Dolezal & McCreary (1999: 84); Nesi (2000: 76 f.), Thumb 2004: 15]

The author was carrying out a broad study on the reading strategies of Scottish "children" (some of whom were in their early teens). Since in reading activities dictionaries may be used, she wanted to find out how her subjects (94 sixth- or seventh-graders) consulted them.

According to Hartmann, the children had to adopt a reading strategy which Mitchell called "*search-do reading*": they were asked to look for the most relevant dictionary information and use it for text comprehension.

Ripfel & Wiegand, who summarize the report most comprehensively, provide the following information:

Subjects had to do a test consisting of five units, in each of which there was a task.

- Task of unit 1: search in the L1 dictionary 5 words whose first three letters are the same.
- Unit 2: search monosemous words and complete sentences using the dictionary information (e.g.: "A *hobo* is another name for ....").
- Unit 3: search a polysemous word and note down the meaning it has in a certain context.
- Unit 4: in the first part, indicate the number of parts of speech existing in a certain entry; in the second part, look for a certain entry and count how many parts of speech it contains (subjects had to fill in a number in several sentences; e.g., "speed can be used as ... parts of speech").
- Unit 5: search again (as in unit 3) the meaning a word has in a given sentence (this time, the entries were long, and some words belonged to several parts of speech).

### **Results:**

According to Ripfel & Wiegand, Mitchell noticed that the children had difficulties:

- finding entries (apparently due to problems with the alphabetical order);
- finding subentries;
- completing the sentences of unit 2 (because they did not understand the definitions);
- finding, in unit 3, the appropriate sense (because they did not understand the entry subdivisions or because they did not understand the words in the definitions);
- distinguishing the various parts of speech to which a word may belong.

The task of unit 5 corresponds to a real situation of dictionary use. It is so difficult that only the best seventh-graders were asked to perform it, but, due to the complexity of entries, few were successful.

Nesi & Meara, Nesi and Thumb quote examples of sentences which subjects completed in unit 2 and remark that Mitchell noticed two types of errors (among others): 1) Subjects concentrated on a part of the definition which they understood and employed it; for example, the sentence "An aspen is a kind of ..." was completed with "leave(s)" or "quiver" instead of "poplar", because the children did not know "poplar" in the definition of "aspen" ("A kind of poplar whose leaves quiver even in a light breeze"). 2) They used a

word that is part not of the definition, but of an encyclopaedic explanation; for example, they completed “A vestment is a kind of ...” with “religious service” because they had found the following explanation for “vestment”: “a ceremonial robe, especially worn by the clergy during religious services”.

It should be noted that the subjects’ behaviour was not observed; instead, Mitchell deduced the children’s difficulties from the test results.

### **Miller & Gildea (1984)<sup>105</sup>**

As psychologists and educators, Miller & Gildea wanted “to know how lexical knowledge is organized in a person’s memory” and “to foster the growth of that lexical knowledge in students”. They had “become convinced that, in spite of its many virtues, your standard desk dictionary is not much use [*sic*] on either score” (p. 13); “you are at risk when you try to use it to learn about words that you never heard before” (p. 14). Since children “are the unchallenged experts on how to misread a dictionary” (*ibid.*), they investigated how children proceed. Their subjects were (apparently American) 5<sup>th</sup> and 6<sup>th</sup> grade pupils (aged 10-11).

These children (whose number is not revealed) were given a task which the authors called LUCAS (acronym for “Look Up, Compose A Sentence”). The dictionaries used were “standard desk” dictionaries and the LDOCE. Miller & Gildea explain – in 1984 – that their project was still going on and that their preliminary report was based on about 20% of the data that had been collected, *viz.* on 457 sentences written by the children.

In their sentences, subjects were to use one of 22 words.<sup>106</sup> Twelve of these 22 were relatively common words, taken from 4<sup>th</sup>-grade basal readers, and 10 were relatively rare, selected from the list of words introduced in 12<sup>th</sup> grade basal readers.

#### Results:

- The authors considered odd or unacceptable only 21% of the 249 sentences in which 4<sup>th</sup>-grade words were used, but 63% of the 208 sentences with rare words were judged to be odd. (p. 17 f.)

Classifying the errors, Miller & Gildea noticed that in the case of difficult words the main cause was a behaviour they called “kidrule strategy”. They give some examples and explain the strategy, or, more exactly, imagine the children to take the following steps (formulated as imperatives):

- 1) Find the target word in the dictionary. 2) Read the definition. 3) Select some short familiar segment of the definition. 4) Compose a sentence containing the segment that has been selected

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<sup>105</sup> This article is cited by several authors, e.g., by Béjoint (1994 [2000: 163 f.]), Nesi & Meara (1994: 3 f.), Dolezal & McCreary (1999: 83), Nesi (2000: 42 f., 77 f.) and Thumb (2004: 15 f.). However, the bibliographical data vary: Béjoint refers to the manuscript of 1984; according to Nesi & Meara and Thumb, the article was published in the *AILA Bulletin* in 1985; Dolezal & McCreary mention only Miller as author and inform – like Béjoint – that the paper was published in *Proceedings of Coling '84*. The fact is that it was published in the last issue of the *AILA Bulletin*, and that the editor’s notice on that issue being the last one is from 1984. But possibly that issue was distributed only in 1985.

<sup>106</sup> If every child had to form a sentence with one of 22 words, the 457 sentences were written by approximately 20 subjects.

from the definition. 5) Substitute the target word for the selected segment in the sentence and write it down. (p. 20)

The authors illustrate the strategy by this example:

- 1) Find “plummet” in the dictionary.
- 2) Read: PLUMMET n. 1. a plumb. 2. a weight. – v. to plunge straight down.
- 3) Select “weight” as short and familiar.
- 4) Compose a sentence using “weight”: “My mother’s weight is 130 pounds.”
- 5) Substitute “plummet” for “weight” in this sentence: My mother’s plummet is 130 pounds. (p. 21)

Since they suspected that one of the causes of incorrect sentences was, apart from “kidrule strategy”, the dictionaries’ definition styles, Miller & Gildea carried out a second study, which is described in 5.1.2.

### Hatherall (1984)

Criticising questionnaire surveys (cf. 1.3.1), the author claims that “the only reliable method of collecting data on dictionary use behaviour is by direct observation”, but he recognizes that “it would probably be difficult for the subjects to behave normally as users” and that direct observation “is so time-consuming that the sample is likely to remain unrepresentatively small” (p. 184). Therefore, he used the written protocol method.

Curiously (for such a critical author), he does not reveal the number of his subjects or any other information about them.<sup>107</sup> Supposedly they were native speakers of English studying German.

Their task was to translate, in one hour, a difficult text from English to German. Hatherall does not say anything about the dictionaries used, but since he refers several times to BDs, it seems that the subjects consulted only this type.<sup>108</sup>

The students were asked to fill in a form (indicating the “search item”, the “information found” and whether the look-up was successful or not) while translating. At the end of the task (Hatherall admits that one hour was too short), the subjects had to answer questions about their translation strategy, their translation and their opinion of the study.

The author does not show numbers or percentages of the results, but he does state that he noticed the following tendencies (p. 187f.):

- “The majority of students do not (voluntarily) read the whole text through in advance of translating [...].”
- “[...] more advanced students use the dictionary more often than the less advanced, which is surprising [...]. Perhaps less advanced students are less confident of retrieving the necessary information [...].”<sup>109</sup>

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<sup>107</sup> The article is cited, e.g., by Hartmann (1987:22), Ripfel & Wiegand (1988: 502), Zöfgen (1994: 38, 47), Stark (1999: 53), Nesi (2000: 35 f.), Tono (2001: 33) and Thumb (2004: 6). Tono erroneously asserts that 22 subjects participated in the study.

<sup>108</sup> He states that “in the initial study” (what does this refer to?) “subjects were given free choice of dictionaries and other reference works” (p. 186).

<sup>109</sup> Hatherall’s conjecture is also surprising if the dictionaries used were BDs. Only in the case of MDs are less advanced students “reluctant” to consult them.

- “Almost all students use only the English-German section of the dictionary when translating into German. [...] More advanced students are slightly [...] more inclined to use the resources of the German-English section when translating into German.”
- “Users of bilingual desk dictionaries do not appear to use the dictionary to look up commonly-occurring closed-set items such as prepositions, or open-class items which they may have met many times before.”
- In phrases consisting of noun and verb, “the noun-entry is consulted first and the verb-entry not at all, or only when the noun-entry fails to assist”.
- “The tendency to translate word-for-word” and the “tradition of viewing language as words in sequence rather than a system or systems of structures” are reinforced by BDs “with their one-word equivalents”.

It should be noted that the first and the last of these results do not refer to dictionary use but to translation strategies and must have been obtained by means of the questionnaire.

### Tono (1984)

This study was reported again in Tono (2001: 143-166) and probably in Tono (1986)<sup>110</sup>. Summaries are to be found, for example, in Ripfel & Wiegand (1988: 507f.), Diab (1990: 42f.), Béjoint (1994 [2000: 162f.]), Dolezal & McCreary (1999: 115) and Thumb (2004: 13). My own summary is based on Tono (2001).<sup>111</sup>

Considering that “in Japan most students at university level use bilingual dictionaries almost exclusively, except for some English-major students” (p. 143), the author wanted “to examine the users’ unconscious use” of BDs, i.e. to find out how they actually consult them. He developed a method which made it possible to investigate their reference skills under almost experimental conditions.<sup>112</sup> His subjects were 402 students “randomly selected from the Japanese [...] population studying at Tokyo Gakugei University”; 63 of them were majoring in English. They were asked “to look up words in dictionaries and translate English passages into Japanese”.

Each test consisted of an English passage, ranging from 100 to 140 words in length, which contained several artificial words. The subjects were provided with mini-dictionaries that were specially designed for this study and contained the entries for these invented words [...] and were asked to translate English passages into Japanese by using the dictionaries. There were several reasons for using invented words and the dictionaries for those words: 1) in order to have all the students look up the same words in the dictionaries, 2) in order to control the information in the dictionary entries, 3) in order to control the lexical knowledge that the users already possessed. (p. 144)

[...] the test provided the subjects with contexts in which they had to make decisions based upon information other than word meanings. The subjects’ unconscious preferences for particular types of dictionary information could thus be explored by manipulating the information variables contained in the mini-dictionary. (*ibid.*)

In the entry of each invented word there were at least two meanings between which the students would have to choose, using the information provided. Tono selected seven

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<sup>110</sup> In the short summary of Tono (1986) provided by Bogaards & Van der Kloot (2001: 104 f.) three of the invented words used by Tono (1984) were mentioned.

<sup>111</sup> Well after writing the summary I discovered Tono’s (1984) dissertation in the internet.

<sup>112</sup> Wiegand (1998: 821) considered it the only study, up until 1998, that deserved to be called an experiment.

information categories (e.g. grammatical information, glosses, collocations) “to see if the subjects used them properly” (p. 146). Apart from these categories he wanted to investigate “the effect of illustrative examples and definition order”. Thus he designed eight different dictionary versions. Using as example the invented word *gought*, he shows (p. 146) that eight different versions were necessary because there were the following options:<sup>113</sup> 1) +V, +E, +O; 2) +V, +E, -O; 3) +V, -E, +O; 4) +V, -E, -O; 5) +V, -E, -O; 6) -V, +E, -O; 7) -V, -E, +O; 8) -V, -E, -O.

Each of the 402 subjects received one of the eight versions, selected randomly. “Four different texts were chosen in order to check the use of particular information in different contexts.” (p. 148) “[...] contexts which excluded all interpretations but one [for the invented words] were carefully avoided.” (p. 144) But Tono acknowledges that “contextual meaning, background knowledge and the like” may have helped some of the students to choose the correct senses (p. 162).

After the 25 minute translation, the subjects were asked to fill out a questionnaire about how they had retrieved the information from the dictionary. “[...] the findings were expected to show the user’s awareness of his or her reference skills while the experiment was carried out to investigate his or her unconscious use of the skills” (p. 159). Tono shows the percentages of users who claimed they had used one of the information categories or had based their choice on the context or other facts.

After providing many data from the study, the author gives the following answers to the question “How do user use dictionaries?”:<sup>114</sup>

The findings indicate that the subjects always chose the first definition whenever necessary information to reject the first one was not provided in the dictionaries.

[...] the findings of this study suggest that the users make better use of some clues other than the given information in the dictionary. [...] The fact that the subjects selected wrong definitions in spite of the information available in the dictionary shows that they did not use the information in question actively but relied on some other clues to choose definitions.

[...] the users rely on the meanings of definitions rather than their syntactic functions.

[...] users tend to hate the complexity of dictionary-design. This is indicated by the fact that the subjects generally preferred the first definition and that they did not even refer to the second definition when the lengthy illustrative examples followed the first definition.

[...] most of the subjects who did not major in English did not use examples to find appropriate definitions. On the contrary, examples prevented the subjects from going on to the second definition in many cases.

### Lantolf, Labarca & den Tuinder (1985)

The authors wanted to find out “how learners interact with bilingual dictionaries”. Their subjects were 99 students “enrolled in beginning, intermediate and advanced undergraduate Spanish classes at the University of Delaware” (“36 in beginning Spanish, 21 in intermediate Spanish, 32 in advanced conversation and Business Spanish combined”).

Their task was to translate 15 short isolated sentences from English to Spanish. The authors’ “primary concern [was] not with overall accuracy in translating (e.g., morphology)

<sup>113</sup> V = information on verb pattern (as one of the seven information categories); E = example; O = order of definitions, i.e. of word senses.

<sup>114</sup> Here I quote from the original report, i.e. from Tono’s (1984) dissertation.

but with the strategies the students employed to interact with bilingual dictionaries". Lantolf, Labarca & den Tuinder do not mention the fact that the main part of most sentences were collocations or idioms (for example, "The little boy's nose is running").

The authors show how five words or expressions were translated by the three groups of students and comment in detail on their consultations.

They distinguish two strategies: one is based on "lexical formalism", the other one is "semantic-based". These strategies are not explained, but apparently there is "lexical formalism" when a compound word is translated by the equivalents of the two components (e.g, when *greenhouse* is translated by *\*casa verde*, i.e. "green house"), and the semantic-based strategy is employed when students try to translate using their own words, the meaning of which approaches that of the English word or phrase (for example, when students use *está en mala situación*, i.e. "is in a bad situation", or *se siente mal* or *se mete en líos* for *is in the doghouse*).

The authors conclude (p. 861):

Both strategies first of all involve a search of one's own linguistic competence prior to accessing the dictionary. Beginning and intermediate level students appear to favor a search strategy based on lexical form, while advanced students are able to employ a more successful semantic-based strategy. The [learners] then employ these same strategies once they decide to access the dictionary.

After presenting and agreeing with Vygotsky's theory of "zone of proximal development", "object-regulation" and "self-regulation", Lantolf, Labarca & den Tuinder argue that "bilingual pedagogical dictionaries have little if any value for language students who are at the stage of object-regulation".

First, to my opinion it was unnecessary to resort to Vygotsky, since it would have sufficed to say that beginners or intermediate learners are not proficient enough to do an L2-L1 translation without a dictionary. Secondly, the errors were not caused by the BD, but by the students' wrong attitudes, or translation strategies. Thus, the only conclusion that can be drawn is that those students must be taught how to translate. As to the BDs, it would be necessary to examine whether they contain the compounds and idioms occurring in the task sentences and whether they are translated correctly. But by no means should the authors have declared that BDs, "regardless of the ingenious devices created by their authors to facilitate their use by language learners, are not likely to meet with much success at least for those students at the elementary level".

### **Neubauer (1985)**

The author wanted to carry out a study similar to Wiegand's (1985), but with different type of students. His 22 subjects also were foreigners from several countries studying in a German university. Unlike those of Wiegand, who were attending a course on lexicography, they were enrolled in a German language program.

Neubauer asked them to make protocols of their consultations in two writing tasks, carried out in class or at home. Even in class, the protocols were not supervised.

The author does not reveal the format of the protocols, but presents, in fourteen pages, annotations and comments on 114 look-ups out of a total of 19 – which he groups together

according to information categories – judging, for example, whether they had been successful or not.

As to quantitative data, he calculates the following percentages (based on 195 consultations) of main information categories looked for:

- Meaning – 67%; gender (of German nouns) – 13%; spelling – 9%; plural form – 4%.

### **Okayama (1985)<sup>115</sup>**

[Tono (2001: 87-96)]

In a footnote to his detailed summary, Tono explains: “This research report does not contain the name of the author or editor. Thus I use the name of the organization ‘Okayama’ for reference.” Okayama is an administrative area (*todofukken* in Japanese) in the western part of Japan. The aim of the investigation, which was “part of a series of studies of teaching English in high schools [...], undertaken by Okayama Prefecture Senior High School Circle of English Education”, was “to see how effectively the learners of English could use English-Japanese dictionaries”. A test was conducted which “assessed only the skills of using bilingual dictionaries for the purpose of recognition”, i.e. in decoding activities (p. 87).

The subjects were “1,055 1st-year senior high school students in 12 different high schools in Okayama”. Some of the schools “produced students with high academic standards [...], while the attainment levels of most of the commercial and technical high schools were relatively low” (p. 91).

Tono criticises several aspects of the study, e.g. the fact that most of the skills tested are necessary in encoding, but not so much or not at all in decoding (p. 91).

Before the (multiple-choice) test, “the students listened to an audiotape that had all the instructions necessary for the tests, so that all subjects had the same instructions” (p. 92).

In the following results, the numbers indicate the percentages of correct answers (p. 93):

- Questions solved without dictionary use: knowledge of the alphabetical order – 89; phonetic signs (sound system) – 72; inferring meanings – 68; disambiguation of parts of speech – 56; parts of speech – 54.
- Questions solved using BDs: inflections – 77; social/cultural information – 68; parts of speech labels – 67; un/countable nouns – 67; synonyms/antonyms – 59; derivatives – 55; stress system – 51; usage – 46.
- In one test item, the subjects had to look up the meaning of 12 words in 3 minutes. The success rate in the first six words varied between 86 and 31 percent, in the remaining six it was between 12 and 4 percent. (Obviously the time was too short for performing the task successfully.)

Please see Tono (1988), who replicated this study.

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<sup>115</sup> All my quotations refer to Tono (2001).

## **Wiegand (1985)**

After discussing topics related to dictionary use, e.g. the concept of *protocol* (cf. 1.3.4), the author reports a study in which this method was employed (p. 60ff.). The purpose was to examine dictionary use in L1-L2 translation. His 45 subjects were native speakers of various languages attending in a German university a course entitled “Introduction to the use of German monolingual dictionaries”, in which they had learned how to make written protocols. They were all advanced students of German.

Here is a summary of the instructions they received for their task:

Translate the text (of about 120 lines) from your L1 into German. Note down (in form of questions like “What is the plural of ..?”) and number all problems encountered. Only in case you do not know the equivalent of a word, do use one or more BDs. Do not use MDs. Having chosen an equivalent, do not check whether your choice is correct.

After finishing the translation, try to improve it consulting the following German MD: [...]. Try to find the answers to your questions and check whether the equivalents chosen in the BD are appropriate for the context. Make a protocol of your look-ups. In the protocol form, there are three columns to fill in with: (a) your question, (b) the information found in the MD, (c) a brief comment on which part of the entry was most helpful and how you found the answer<sup>116</sup> (p. 61).

For the sake of illustration, the author shows parts of one of the subjects' protocol, the two versions of her translation and the original text (p. 63-69).

Although 45 students had participated, Wiegand had at the moment only 35 protocols at his disposal. They contained a total of about 3,000 questions, which may be classified into approximately 2,450 situations of use and subdivided into questions about grammar (55%) and about meaning, morphology, pragmatics or text constitution (45%). The author presents detailed results only for the approximately 1,650 questions about grammar (as is indicated in the title of his article). They are distributed as follows (p. 73):

- Morphology – 650; syntax – 350; prepositions – 280; word formation – 140; spelling and punctuation – 80; not yet classified – 150.<sup>117</sup>

Wiegand subdivides the various groups (e.g., the questions about morphology) and comments on them, but I will omit these details.

Analysing the protocols and the translations, the author examined whether the MDs – and which ones – had been helpful. He remarks that, for example in the case of syntax, 190 of the 350 look-ups had been successful, which leads him to conclude that the MDs consulted have, on average, a “use value” of 55% (p. 77).

Wiegand did not seek to determine whether the unsuccessful look-ups were due to deficiencies of the dictionaries or to the subjects' lack of reference skills.

## **Krings (1986)**

As is implicit in the title of this PhD thesis of more than 500 pages (“What happens in translators’ heads”), the author’s main objective was to examine the translation process.

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<sup>116</sup> The MDs cited by Wiegand are L1Ds, because in 1985 there did not yet exist MLDs of German.

<sup>117</sup> The large number of questions about morphology reflects the complexity of German in this respect.

The subtitle reveals that his subjects were not professional translators but advanced learners of French. Of course I cannot deal with the whole thesis. Suffice it to say that Krings is considered the pioneer in the use of oral protocols in research into the translation process (cf. Livbjerg & Mees 2003).

His 8 German subjects were majoring in French and were accustomed to doing translations. In Krings' study half of them had to translate a text from French into German, the other half another text from German into French. Both texts were complete, authentic and quite difficult, containing, for example, metaphors and infrequent collocations (p. 53). The students were allowed and encouraged to use their own dictionaries.

They were instructed how to proceed, especially about the "think aloud" method, and the task was executed in a pleasant atmosphere. The researcher was present, but did not interfere, except to solve technical problems (for example, changing the tapes, since the oral protocols were audiotaped).

The results are based on an analysis of the translations (including all corrections and modifications, which had to be highlighted) and on the transcriptions of the TAPs. These data allowed the author to minutely describe the subjects' strategies and the outcome of the task (good or inadequate translations).

In the presentation of the results, Krings distinguishes the two translation types (L2-L1, L1-L2), and, with regard to the former, he differentiates decoding problems (in French) from encoding problems (in the L1).

Main results concerning the use of dictionaries by 4 subjects in L2-L1 translation (p. 240ff.):

- BDs were consulted 87 times, MDs only 5 times. (Therefore, the following remarks refer only to the use of BDs.)
- BDs were consulted in two thirds of all problems encountered.
- General strategies: When the lexical item about which the subjects needed some information was a single word, they looked up all senses, stopping where the phraseological [multi-word] part begins; when the item was a multi-word expression, the entry's second part – in which such expressions are normally dealt with – was read attentively.
- Some specific strategies: The first equivalent was always examined, more than the others; the subjects paid more attention to common words (in the L1) than to less common ones; looking at the equivalents, they sometimes made a pre-selection taking into account the context; on other occasions the students read the entry selectively, trying only to confirm the result of their own inference.<sup>118</sup>
- In 14.9% of look-ups, the subjects did not find the information they wanted (although it mostly did exist in the BD).
- Faced with problems of comprehension or translation, the students tried to solve them relying on guessing (inference) in 30 cases, while in 87 cases they consulted the BD. Inference lead to correct solutions less frequently than consultations (40% vs. 73.6%).
- In 38 translation problems the subjects tried to guess first, then consulted the BD. In these cases, the look-ups had the following consequences: they confirmed the results of inferences (52.6%), improved them (39.5%) or deteriorated them (7.9%).
- Strategies that show in some cases of lack of reference skills: a) students looked for inflected forms among lemmas; b) they did not consult the BD, imagining that the lexical item was not lemmatized; c) they did not take entire advantage of dictionary information; d) they wrote down the correct information incorrectly; e) they did not understand or notice dictionary abbreviations or symbols.

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<sup>118</sup> Krings makes it clear (p. 246) that remarks on attitudes are only hypotheses because "verbalizations cannot be considered the direct reflection of cognitive processes".

Main results concerning the use of dictionaries by 4 subjects in L1-L2 translation (p. 368ff.):

- The 4 subjects faced a total of 278 translation problems; in 64% of these cases, they consulted dictionaries. For each problem, they made on average 1.46 consultations in BDs and/or MDs, i.e. a total of 260 consultations, 86.2% of which in BDs and 13.8% in MDs.
- The main purposes of BD use were: a) finding equivalents – 162, i.e. 72.3% of 224 look-ups in BDs; b) finding an L2 equivalent of a word which the student preferred to look up instead of the word in the text – 13.8%;<sup>119</sup> c) checking in the L2-L1 part of the BD whether a potential equivalent was appropriate – 5.8%; d) checking spelling or grammatical information about the equivalent – 4.9%. (Except in purpose “a”, not only are the numbers very small, but there were also considerable differences among the 4 subjects.)
- Since the BDs offered up to 25 equivalents for the lemmas, the students’ main strategy for choosing the right one was to read the glosses (sometimes called “discriminators”).
- Only in 39 (24%) of the 162 consultations aimed at finding the equivalent of an item found in the text were the subjects successful.
- In 37.5% of all translation problems, the equivalent which was used had been found in the BDs; 61.3% of all potential equivalents found in the BDs were used in the final version of the translation. (Krings therefore remarks that the use of BDs was a quite successful strategy.)
- MDs were consulted mainly for checking meaning or possible restrictions on the use of potential equivalents (72.2% of 36 look-ups in MDs). In 8.3% of the look-ups in MDs, the subjects looked for information on grammar or spelling; 97.2% of all these look-ups were successful.

The author presents an enormous amount of data, but unfortunately they are based on the work of only 4 subjects in each type of translation.

### **Iqbal (1987)**

[Diab (1990: 47f.); Zöfgen (1994: 37-58); Dolezal & McCreary (1999: 62); Tono (2001: 43)]

In his study, the author not only submitted a questionnaire (cf. 2.2) but also administered a test. However, the sources from which I collected the information provide details neither on how the test was carried out nor on its results.

### **Miller & Gildea (1987)**

[Dolezal & McCreary (1999: 83); Nesi (2000: 46)]

The brief summary in Dolezal & McCreary seems to indicate that this paper deals with the same study reported by Miller & Gildea (1984). Nesi refers to it as “a later paper”, in which was recorded “a further study”. However, she provides no details except that it “casts doubt on the value of showing the subject several example sentences rather than one” and that the “authors found that ‘the acceptability ratings of sentences written after seeing one model sentence were the same as the rating of sentences written on the basis of three examples’.”

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<sup>119</sup> An example in English: instead of looking up the verb “permit” to find its L2 equivalent, the students might look up “allow”.

### Tomaszczyk (1987)

Based on his experience “as a freelance language editor” and “as a teacher of translation at two Polish universities”, the author discusses dictionary use. He had analysed texts translated by professional translators and by his students and had examined how dictionaries could have helped.

As was said in the introduction of this book, such types of studies will not be summarized. However, Tomaszczyk also asserts that he observed his students’ behaviour when doing translations in class, which is why I include his article in this chapter.

His students were advanced learners of English, but the author reveals neither the number of “subjects” nor details on the method employed. In his presentation of results, he does not distinguish between the two ways of obtaining results (analysis of translations and observation) and does not show quantitative data either.

He claims to have noticed the following:

- “[...] the vast majority of errors would not have occurred if dictionaries had been used with skill” (p. 137).
- “When language problems arise, students first ask some body for help [...] and only if this does not produce an acceptable result will they consult a dictionary” (*ibid.*).
- Lexical items (i.e. not grammatical information) are almost always looked up in BDs.
- Many mistakes are not due to lack of reference skills or to inadequate dictionaries but to “an unwillingness to consult reference works at all” (p. 140).

### Neubach & Cohen (1988)

The methods employed by these researchers were TAPs and interviews. Their 6 subjects “were enrolled in a course in the reading of academic texts” in EFL at the Hebrew University of Jerusalem. It may be assumed that they were Israelis. “Two students each were selected from high, intermediate, and low-level EFL classes.” (p. 5) In the reported study, three dictionaries were used, *viz.* two MLDs (*Longman Active Study Dictionary* by the low-level students and *Collins English Learners’ Dictionary* by the other four) and a BD, used by all 6 subjects.

The students were given two tasks. In each of them they “were to provide verbal report protocols while searching for words in the dictionary, indicating the processes they were using in their search” (p. 5); and afterwards they were interviewed “about their attitudes and preferences regarding the selection and use of the dictionaries” (p. 6). The TAPs were tape-recorded.

In the first task, subjects had to read ten sentences, “each containing an underlined polysemous word”, and “look these words up in the dictionary (even when they claimed that they knew them), first in the monolingual and then in the bilingual dictionary”; they “were to give each word meaning in their native language (Hebrew) and to explain why they had selected that meaning”.

In the second task, students had to read a text of about 150 words, look up ten uncommon words and summarize the text in their L1.

The authors were interested especially in the subjects’ strategies of dictionary use. In their presentation of results they try to ask the research questions, listing some strategies

and drawing some conclusions. Because of the very small number of subjects, I present only few of their remarks:

- Some students (how many of the 6?) read only the first definition in the MLDs.
- The two low-level students “had ineffective strategies and encountered numerous problems”; they did not understand the definitions and needed more time to look up words.
- Apparently the dictionaries did not help much in the second task, among other things because all students seemed to understand the general content of the text; but the low-level students had more difficulty because “they lacked the relevant world knowledge for correctly interpreting the text” (p. 10).
- The two advanced students preferred the MLD because they did not trust the BD so much. The other four preferred the BD.
- “Whereas high-proficiency students felt that problems encountered while using the dictionary might be the result of weaknesses in the dictionary, the low students felt that the problems they encountered were *their* problems” (p. 12).

Nesi (2000: 38f.) criticizes several aspects of this study: very few subjects; the authors did not systematically analyse the protocol reports, and their summaries may reflect their own interpretations; as to TAPs in general, subjects may emphasize problems and difficulties, so that “more data will be collected for long and frustrating searches than for quick and successful searches”. Thumb (2004: 13) observes that Neubach & Cohen did not clearly show that the subjects’ errors were due to lack of reference skills and not to deficiencies in the dictionaries.

### **Tono (1988)<sup>120</sup>**

[Tono (2001: 91-93)]

An updated version of this paper is chapter 6 of Tono (2001). In his article and chapter, the author discusses how to investigate reference skills and summarizes Okayama (1985), criticizing some aspects of that study. He also reports an investigation in which he administered the same set of tests as in the Okayama study, because he wanted to obtain more data from other EFL learners.

His subjects were “76 third-year students at the Tokyo Metropolitan College of Aeronautical Engineering”, who were “at the upper-beginning level in their English proficiency” (p. 91).

Please see the details of the test set in Okayama (1985), above. The only difference in Tono’s study was that his subjects did not listen to an audiotape with instructions about how to proceed.

The results are very similar to those of the Okayama investigation. Therefore, I will present only those few items in which the difference in percentages is greater than 5. The two numbers indicated before and after the slash are the percentages of Okayama’s and Tono’s results, respectively.

- Questions solved without dictionary use: knowledge of the alphabetical order – 89 / 98; disambiguation of parts of speech – 56 / 71.

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<sup>120</sup> All my quotations refer to Tono (2001).

- Questions solved using BDs: un/countable nouns – 67 / 53; derivatives – 55 / 43; usage – 46 / 64; social/cultural information – 68 / 90.
- In one test item, the subjects had to look up the meaning of 12 words in 3 minutes. The success rate on the first six words varied between 86 and 31 (Okayama) / 89 and 63 (Tono); in the remaining six, there were small differences.

Tono's replication of the Okayama study resulted in very similar data on most items. The differences may be due not only to differences in subjects' reference skills but also to dictionaries. Tono asserts that the "Okayama test was made in consideration of several popular bilingual learner's dictionaries" (p. 95), but he does not mention which or what kind of BDs were used in his test, acknowledging, however, that "[f]urther investigation is needed to relate dictionary layout to the user's skills" (*ibid.*)

### **Bareggi (1989)**

[Béjoint (1994 [2000: 149]); Cowie (1999: 189); Al-Ajmi (2002: 126)]

Béjoint provides the following pieces of information: The methods used in this study were a questionnaire, a test and direct observation. The subjects were 70 Italians studying English. Bareggi noticed that in MLDs they looked not only for meaning and spelling, but also for information on usage and on collocations.

As to Cowie, I quote: "Bareggi [...] was struck by the inability of students to use contextual clues to locate the appropriate sense in polysemous entries – and a consequent tendency to fall back on the first listed sense (1989: 172)."

Al-Ajmi cites Bareggi among those studies which showed that in long entries the users seldom go beyond the first sense.

### **Atkins & Knowles (1990)**

The authors describe and publish the first results of the study reported more fully by Atkins & Varantola (1998), which was cited in 2.2. The data related to actual dictionary use are presented below (cf. Atkins & Varantola 1998).

### **Blachowicz et al. (1990)**

[Thumb (2004: 14)]

Thumb does not reveal the number of subjects nor their L1. She informs only that they were 4<sup>th</sup>-graders. In the summary provided by ERIC (Education Resources Information Center)<sup>121</sup>, it is said that they were 55 American pupils of "three middle-class school systems in the suburbs of a large, Midwestern city".

"The basic task in which the students were observed was the completion of a dictionary assignment common to fourth-grade reading instruction, using the dictionary to locate an entry for a targeted word which was presented in sentence context." (ERIC)

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<sup>121</sup> Available at  
<http://74.125.93.132/search?q=cache:Tkqz7SFp7V8J:www.eric.ed.gov/ERICWebPortal/recordDetail%3Faccno%3DED323491+%22Teachers+look+at+fourth+grade+students&cd=1&hl=pt-BR&ct=clnk&gl=br>.

According to Thumb, Blachowicz et al. collected data “by means of observation, interview and test”.

As to results, I quote Thumb:

- [...] the students adopted different skills for looking up the target words. Before starting the look-up, some students appeared to adopt the strategy of formulating a possible word meaning [...]. When locating the target headword, the students either adopted the skill of plodding through each entry letter page-by-page or the skill of using the guidewords. Upon locating the target entry, they either referred to or ignored the pronunciation key. They were then observed to adopt one of the following strategies (Blachowicz et al. (1990: 12):
- they searched for a meaning that seemed to fit the target sentence and stopped as soon as their criteria were met without looking past the definition they chose (in some cases, they stopped after reading the first definition);
- they read through each and all definitions and then went back and chose the one thought to have the best fit;
- they read all the definitions but proceeded to formulate their own definitions which were more encompassing of all the definitions, looking for something in common among the definitions.

### **Diab (1990)**

Apart from a questionnaire survey and interviews, the author employed another method, as was mentioned in the summary by Diab (1990) in 2.2, namely “Dictionary Using Diaries”, which were returned by 13 students. Unfortunately I did not have access to the pages on which he may have presented the results for this part of the study.

### **Müllich (1990)**

Since on the one hand, several new (or new editions of) MDs, especially English MLDs, had been published in the 1980s, and, on the other hand, in most user studies only questionnaire surveys had been carried out, the author wanted to investigate how German learners actually use MDs. His study is reported in this book of more than 500 pages.

Müllich’s subjects were 108 senior high school students;<sup>122</sup> 63 were learning English, 45 had chosen French. Each group was subdivided according to four proficiency levels. At school, the use of specific MDs was allowed. In the investigation, the majority used the English OALD or the French *Micro-Robert*. Their task was an L2-L1 translation “as a somewhat extreme use of the monolingual dictionary, thus also revealing borderline cases. [...] the corpus of texts to be translated cover[ed] a wide range of short passages which differ in style, tone and register [...].” (p. 485)

The researcher used the protocol method. Following Wiegand’s (1985) recommendations, he asked the students to write the translation in one column of a page and make annotations about their consultations in another column. In some parts of the translation, the written protocol was substituted by a TAP, which was tape-recorded. The data were collected between 1985 and 1989.

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<sup>122</sup> The German school type *Gymnasium* consists of nine grades; pupils are aged 11 to 19; in Müllich’s study they must have been between 16 and 19 years old.

Müllich “developed OMEGA (**O**ption, **M**inimization, **E**lection, **G**enesis, **A**daptation) as an expedient for the description and analysis of the whole process of dictionary use” (p. 487), i.e., he divided consultations into five stages: a) option between consulting or not consulting; b) determining the lexical item to be looked up; c) selection of the appropriate sense, in the case of polysemous words; d) finding the equivalent (not in the dictionary – since in MDs there are no equivalents – but in one’s own mind); e) grammatical, syntactic, lexical adaptation of the equivalent to the L1 text.

In his analysis, based on the translations, the written protocols and the transcriptions of the oral protocols, the author uses, apart from the letters O, M, E, G and A, more than one hundred abbreviations, with which he characterises details of the consultations, such as, for example, “lack of entry in the MD”, “circular definition”, “lack of comprehension of the meaning”, “(wrong) lexical creation”.

General findings:

- The texts’ level of difficulty influenced look-up success. Factual texts with neutral style and register caused fewer problems than texts containing ironical expressions, colloquialisms, metaphors or literary language. (p. 467)
- The context was very important for comprehension and for successful look-ups; when, due to a large number of unknown words, subjects did not understand the text as a whole, consultations generally failed. (p. 468)
- Difficulties in dictionary use were caused, for the learners of French, by the “relatively high level of abstraction and the high formal character of [French] lexical items” and for the learners of English “mainly by the strong contextuality and idiomacity of the [English] lexicon” (p. 469). Especially the French MDs were completely inappropriate for the subjects’ level of proficiency. (p. 471)<sup>123</sup>
- Many students were not able to “join the components of meaning” for understanding the meaning of words and provide the equivalent. Frequently they translated the definition, thus treating the MD as if it were a BD. (p. 470)
- Often they used the MD in an inadequate manner.<sup>124</sup> “Students believed they had found their solution in the dictionary, but in reality, they had only read enough of the entry to confirm a preconceived idea, or simply deviated from the dictionary information on the grounds of interpretation and (personal) association, or simply giving up (not even) half way through a very long entry [...]” (p. 489)

In Dolezal & McCreary’s (1999: 87) short summary, Müllich’s investigation is considered a “scientifically rigorous study”, and Nesi (2000: 40) remarks that perhaps his biggest contribution is “what he calls the ‘sham use’ of a dictionary”, which seems to be “a kind of ‘kidrule’ strategy for foreign learners”.<sup>125</sup>

### Al-Besbasi (1991)

[Diab (1990: 50f.)<sup>126</sup>; Dolezal & McCreary (1999: 1)]

This is a PhD thesis in which the author reports his study on “cognitive processes of translation between English and Arabic”, especially in dictionary use (cf. the title). He used

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<sup>123</sup> In his English summary, Müllich expresses this in the following way: “While successful dictionary use was greatly hampered by the high level of textuality in English, it was totally undermined by the difficult definitions in French.” (p. 487)

<sup>124</sup> Müllich uses the word “*Schein*”, which is translated in the English summary as “sham”.

<sup>125</sup> About this strategy, cf. Miller & Gildea (1984) in 3.1.

<sup>126</sup> Al-Besbasi’s thesis was defended in 1991, but Diab apparently had access to it in 1990.

the TAP method. According to Dolezal & McCreary, his eight subjects were “Arabic speakers”, but according to Diab they were “both native speakers of English and of Arabic”, and they were “translation trainees”.

They had to translate a short text (17 lines, 213 words) from English into Arabic, being allowed to use several MDs and BDs. Their oral protocols were audio-taped.

According to Diab, the “preliminary findings included”:

- “1. Dissatisfaction with dictionaries was frequently expressed by all subjects; among aspects complained about were length of entries and lack of adequate equivalents.”
- “2. Bilingual dictionaries were dominating over monolingual ones.”
- “3. Dictionaries were used mainly for checking spelling, grammar and verifying meanings of words.”
- “4. The subjects did not always make proper use of bilingual dictionaries as there were instances of choosing the wrong entry and missing out the appropriate equivalent.”
- “5. There were marked differences between the subjects as to the strategies they employed. Native speakers of Arabic, for example, completely ignored using an Arabic-English dictionary although available.”

### **Krantz (1991)**

The author examined in which way a BD and an MD were used, but since her main objective was to assess the effects of dictionary use on vocabulary learning, her study is summarized in 4.4.2.

### **Tono (1991)**

[Tono (2001: 97-115)]

This study is reported again in Tono (2001), more precisely in chapter 7 (p. 97-115). All my quotations are from that book.

The author wanted “to observe what a successful dictionary user does in actual look-up activities”. His subjects were 10 Japanese teachers or learners of English at Tokyo Gakugei University. They were first divided into three levels: group A – 3 teachers (advanced); group B – 3 Japanese-major students (intermediate); 4 college students (elementary). But a cloze test showed that two students of group B should belong to group A, and the third one’s proficiency was in fact elementary. So there remained only two groups, LG (“Low group”) and HG (“High group”).

First the subjects had to fill out a questionnaire about their experience with dictionaries, e.g. about frequency of use; then they were asked to answer some questions about lexicographical conventions in an English-Japanese BD. “The following six items were examined: (1) Countable/uncountable, (2) the form ‘one’s’, (3) illustrative examples, (4) syllabification, (5) degrees of importance, and (6) derivative forms.” (p. 101) On p. 102-111 and in six tables, Tono presents the data of this part of his study, including each student’s reference skills. He notices that: 1) “successful and less successful users take more or less the same amount of time to find the headword”; 2) successful users “are good thinkers and they never rush to consult a dictionary”; 3) “the good dictionary user has sufficient language proficiency to understand the content of the entry” (in BDs); 4) “the

mastery of some conventions seems to be quite independent of users' language proficiency" (p. 111).

In the third part of the study, the subjects had to translate a short text (of 95 words) from English into their L1. "Since [they] were asked to perform their tasks as naturally as possible, some did not use dictionaries very much and others looked up so many words in one sentence that they could not finish translating the whole paragraph." (p. 111) During the task, their actions were monitored and videotaped (p. 99).

Tono verified not only how many words were looked up (in the BD) but also how much time each subject spent on the consultations and the translation.

Main results (p. 111ff.):

- The subjects of HG – who translated all words of the text – looked up fewer words (on average, 6.4% of the words translated, vs. 23.3% in LG) and spent less time in each consultation. Language proficiency "affected the look-up process more directly, compared with the dictionary convention task". "Successful dictionary users exhibited the characteristics of 'good thinkers' again. They did not rush to a dictionary to look up every word." (p. 114)

Tono, who presents a statistical analysis of the results, admits in his summary:

With hindsight, it is clear that the idea of pedagogising a list of successful behaviours and teaching them to less successful users could be somewhat simplistic. The translation task revealed that actual dictionary use depends on many different factors besides language proficiency, such as the purpose of the task, the difficulty level of the task, time limitations, the quality of the translation, familiarity with the dictionary, and the like.

### **Brito (1992)**

Please see subchapter 2.1.

### **Nuccorini (1992)**

The subjects in this study were 16 Italians: 11 students attending an ESP course and 5 teachers of English. The students had participated in a two-month course on dictionary use, where "a certain competence about dictionary use was taken for granted on the part of the five teachers" (p. 90). "The main objective was to gather some 'real' data on dictionary use and to verify whether there are considerable differences between the two groups [...]" (*ibid.*). The method chosen was the written protocol, although Nuccorini does not use this term. She explains that subjects had to fill in forms (a copy being attached to the article), but she does not inform us when they had to do this. Since in the form there is an item called "occasion of consultation", it seems that they were asked to fill in the form on any occasion of dictionary use (probably at home, which is why the protocols were not supervised). They were asked to make a protocol of a certain number of consultations: five were expected from each student, ten from each teacher. For every look-up they were to use one copy of the form. The students returned a total of 56 forms (i.e. protocollled 56 consultations), the teachers 48.

The items in the form to be filled in were: lexical item looked up; context in which the word or expression occurred; dictionary(ies) consulted; answer found (in which dictionary) or not found; reason for consultation (i.e. information looked for); occasion of consultation (productive activities, receptive activities or others); answer found in which part of the entry; answer considered satisfying, not satisfying or half-satisfying.

Main findings from the students' 56 and the teachers' 48 forms or consultations (the respective percentages are given before and after the slash):

- Information wanted: meaning – 75% / 52%. (Pronunciation – 14.2% of students' consultations.)
- Circumstances of use: receptive activities – 60.7% / 43.8%; productive activities – 16.01% / 22.9%; others – 21.4% / 33.3%.
- Dictionaries used: BDs – 75% / 45.8%; MDs – 55.4% / 100%<sup>127</sup>; in 30.4% / 22.9%, both were used.
- The wanted information was found in the: definition – 21.4% / 29.2%; definition and other elements – 26.8% / 16.7%. (Teachers found it in the examples alone in 10.4% of the look-ups.)
- Successful look-ups (as reported by subjects): 91.1% / 77.1%.
- Dictionary information considered satisfying: 80.4% / 77.1%.

Nuccorini draws certain conclusions, but she admits that “the small number of informants and their specific needs on the one hand and the empirical character of the research, a case study rather than a survey, on the other, do not allow generalizations” (p. 98).

### **Al-Khawaldeh (1994)**

[Diab & Hamdan (1999: 286)]

Diab & Hamdan provide only the following information:

Al-Khawaldeh (1994) investigated strategies of dictionary use in the contexts of reading and writing among school pupils, using questionnaires and interviews in addition to think-aloud procedures. The study showed that the strategies employed by the subjects varied according to the variables of achievement, sex, academic specialization, and type of learning task.

### **Duvå & Laursen (1994)**

This study was connected to a Danish project called “Translation of LSP Texts”. The authors wanted to find out mainly “which information should an ideal LSP dictionary contain in order to cover the needs of the user” (p. 247). The subjects were Danish “students of our translating and interpreting courses, graduates and professional translators”. Twenty of them had French as FL; for 14, the FL was Spanish. They were asked to translate “a typical economic text” from Danish into the respective FL and to make a written protocol about their use of the reference works they themselves had chosen. The protocol consisted of the filling-in of four-column sheets, providing the following information: a) translation problem; b) information obtained in one or more “translation

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<sup>127</sup> Erroneously, Nuccorini says that MDs were consulted in 60 cases; in fact, the teachers returned only 48 forms.

tools” (dictionaries, text books, encyclopedias); c) comments on the information found; d) time taken to solve the problem.

As to the data, the authors first show what kinds of translation tools had been preferred (*viz.*, mostly non-specialized BDs) and then comment on types of problems the subjects had encountered and tried to solve.

In their conclusions, Duvå & Laursen state that no satisfactory translation had been produced and that inexperienced as well as the more experienced subjects had had many serious problems because they were lacking knowledge and “they did not succeed in acquiring this knowledge either because the tools were inadequate or because the user strategies were not optimal” (p. 266).

In the authors’ opinion, the ideal LSP dictionary should contain: information about the subject (encyclopaedic information), definitions, field labels, examples and collocations.

### **Fraser (1994)**

[Fraser, Janet (1999: 26)]

In her 1999 article about the translation process, the author wanted “to demonstrate that there is a role both for the use of bilingual dictionaries and for what I shall call ‘intelligent guessing’ [...]”; she supported her arguments with examples from a study reported in Fraser (1994). About this investigation, she provides the following information (p. 26):

[...] the [21 practising professional] translators were given a French news item on reform in higher education in France and asked to translate it into English [...]. As they translated, they gave a commentary on the process in which they were engaging (a verbal or ‘think-aloud’ protocol, or TAP) which was subsequently analysed to identify and categorise these processes.

Analysing and quoting parts of the protocols, Fraser, J. (1999) comments on the subjects’ remarks and their translation strategies, but she reveals almost no quantitative data. Only once does she say that two thirds of the translators were sceptical about BDs (p. 26). In two other remarks she asserts that the “better translators used the dictionary translation as a starting point in the search for a better equivalent” (p. 28) and that these translators “used a variety of resources to arrive at what they considered to be an acceptable translation” (p. 31).

### **Nielsen (1994)**

The second chapter of this book deals with dictionary use. In one section (p. 23ff.), the author provides some information on “an ongoing lexicographic research project in Denmark in which use has been made of dictionary use records”. His “brief account is based on the preliminary results reported by Nielsen (1990)”.<sup>128</sup>

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<sup>128</sup> Nielsen (1990): “Foreløbige resultater af brugerundersøgelse”. Paper presented at OFT Project Meeting, Copenhagen, on 7 December 1990.

The records “consisted of ten pages divided into three columns each”. They were “completed by the eight advanced students of English translating an English legal text into Danish”. Subjects used English-Danish and Danish-English dictionaries (249 look-ups) as well as some other sources of information (55 consultations).

Nielsen shows and comments on five excerpts from these records and concludes that “the available dictionaries do not contain the precise information which the informant sought, and the informant lacks [special L1 knowledge] as well as [special L2 knowledge] in respect of legal language” (p. 31).

### **Nuccorini (1994)**

This study is different from the others summarized in this chapter because the researcher did not observe or test subjects or ask them to make protocols, but analysed the errors made in written exam papers. The exam was an L2-L1 translation done by 222 Italian university students of English who had been requested to indicate the dictionaries they were going to consult. Only BDs were used. 45.9% of the students consulted BDs published in the 1960s. Other BDs had been published in the 1970s or 1980s. Nuccorini asserts that “as a matter of fact no significant difference was found in the errors made by the students who used [a BD published in 1961] as opposed to the errors made by the students who used the other dictionaries” so that “what matters is the students’ capability of consulting dictionaries rather than dictionaries themselves” (p. 589).<sup>129</sup>

The author also asserts that “the percentages of passes and fails of these tests were compared with those of the previous academic year, when students were not allowed to use bilingual dictionaries” and that “the rate turned out to be roughly the same” (p. 587), which makes her claim that “at least judging from *prima facie* results, not to (be allowed to) consult a dictionary and not to be able to consult it amount to the same thing”. This led her to select and classify students’ lexicographic errors. She established five categories: 1. homonymic and polysemous entries; 2. derivatives; 3. compounds; 4. idiomatic expressions and phrasal verbs; 5. miscellaneous items (e.g., false friends and abbreviations). Some of these errors (whose number is not revealed) were checked in the BDs used.

#### Main results:

- The largest number of errors occurred with (in decreasing order): the fifth category (anysomorphic uses and constructions); homonyms and polysemous words; phrasal verbs.
- Idiomatic expressions were generally correctly translated, and derivatives and compounds presented fewer problems than other categories. (p. 590)

Nuccorini shows some errors and the information provided in the BDs, which makes it possible to conclude or imagine why the mistakes were made. For example, in some cases of homonymy, “students failed to identify the appropriate entry”. And “in a number of cases dictionaries have not been used at all” (p. 590).

In her conclusions, the author stresses the fact that the BDs were used in an exam, so that the data do not “shed any light on how students behave when they consult dictionaries without constraints”. On the other hand, she claims that “whenever errors themselves have

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<sup>129</sup> This is a conclusion that may be valid in the case of the specific BDs used in the exam, but certainly may not be generalized. Otherwise it would be unnecessary to improve dictionaries and edit new ones.

made it possible to ascertain that dictionaries had actually been used, they have also evidenced a number of problematic issues definitely more connected, as hypothesized, with students' lack of reference skills than with dictionaries' shortcomings" (p. 595).

### **Yokoyama (1994)**

[Tono (2001: 33, 35)]

In one paragraph of p. 35, Tono briefly provides information on this study and on Momoi's (1998), both conducted in Japan among EFL learners.

[These studies] are based on the framework of the look-up process research originally conducted by Tono (1984 [...]). They both investigated dictionary use in L2 writing (L2/L1 translation) with bilingual learners' dictionaries by thinking-aloud protocols. The results show that learners use translation equivalents and illustrative examples primarily and almost no attention was paid to extra information such as verb subcategorization information, usage notes, culture notes, contrastive features between English and Japanese, etc.”<sup>130</sup>

Yokoyama's subjects were 24 university students.

### **Gu & Johnson (1996)**

In the abstract, the authors provide the following information:

We aimed to establish the vocabulary learning strategies used by Chinese university learners of English and the relationship between their strategies and outcomes in learning English. We asked 850 sophomore non-English majors at Beijing Normal University to complete a vocabulary learning questionnaire. We correlated replies to the questionnaire with results on a vocabulary size test and on the College English Test.

In the questionnaire, the authors offered 91 options of strategies, among them 17 “dictionary strategies”, subdivided into strategies “for comprehension”, “extended strategies” and “looking-up strategies”. In the first group, one option was, e.g., “When I see an unfamiliar word again and again, I look it up.” One option of the second group was “I pay attention to the examples of use when I look up a word in a dictionary”, and one of the third group was “If the new word I try to look up seems to have a prefix or suffix, I will try the entry for the stem” (p. 676).

After the filling in of the questionnaire, two tests were administered. In the first one, subjects were asked “to provide a Chinese equivalent, a synonym, or paraphrase showing their understanding of at least one meaning, for each of the 50 target words and to leave the ‘unknowns’ blank”. The second one was Nation's (1990: 266-268) “Vocabulary Levels Test at the 3,000-word level”.

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<sup>130</sup> Curiously, Tono mentions “L2 writing (L2/L1 translation)”, which obviously are different activities. On p. 33 he only mentions “L2 writing” in the case of Yokoyama. On the other hand, “L2/L1 translation” cannot refer to Momoi, since the title of his M. Ed. dissertation makes it clear that the activity was “writing an English composition”.

A third instrument of the study was “a composite score” to measure proficiency in English. It comprised sections on listening comprehension, vocabulary, structure, reading comprehension, cloze, and sentence translation from Chinese into English.

Of course, only dictionary use is of interest here. The few results revealed by the authors are a combination of the questionnaire data and the test data.<sup>131</sup>

- Among the suggested strategies, dictionary use was chosen in first place, even by the most proficient students. The means of the three groups mentioned above were: 1 – 4.97; 2 – 4.82; 3 – 4.55. Only two other strategies were preferred to the third dictionary strategy: guessing from a wider context (4.60) and a strategy called “self-initiation” (4.58).

Gu & Johnson summarize the results as follows (p. 659):

Learners’ vocabulary sizes seem very much related to, among other things, the learners’ self-initiation in learning, their skillful use of a dictionary, their willingness to spend extracurricular time to practice newly learned items, and their remembering words in semantically meaningful groups.

### Jääskeläinen (1996)

According to Ronowicz et al. (2005: 583f.), Jääskeläinen “used the results from two unpublished dissertations [...] to demonstrate that professional and semi-professional translators who produce good quality translations consult dictionaries more often and in more sophisticated ways than novice translators [...].” In reality, concerning dictionary use, the author only shows a table, based on the results of two studies in which the TAP method had been used to investigate the translation process, with the data on the number of look-ups.

In the first study (a doctoral thesis of another author), “the subjects were four college students learning French as a second language, four competent bilinguals with little or no experience in translating, and four professional translators”, who had to translate from French into their L1, English. In the second study, the author’s “licentiate thesis”, “the subjects were four translation students [...], four professional translators [...], and four ‘educated laymen’ [...]”, who translated from English into Finnish, their L1. After the analysis of the translations, Jääskeläinen preferred to divide her subjects into three “quality groups”: good, mediocre, and weak.

Most results are not of interest here. As to dictionary use, the author presents only the “total number of [...] consultations (mean)” (p. 65):

- Study 1: translators – 24; bilinguals – 7; students – 14.
- Study 2: good – 20; mediocre – 18; weak – 10.

As can be seen, in both studies subjects with the greatest proficiency in translation used dictionaries the most.

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<sup>131</sup> The authors do not mention any specific dictionary type. But since in the strategies of dictionary use they refer to definitions, the dictionaries must have been MDs.

### Atkins & Varantola (1997)

This article reports on two studies carried out using practically the same methodology, but with different groups, in two different countries and moments. In England, in 1991, the subjects were 71 people from different language communities who were taking part in the EURALEX Workshop on Dictionary Use in Oxford (group O); and in Finland, in 1993, they were 32 students of translation at the University of Tampere (group T).

In group O, in which all participants were experienced dictionary users (and some of them even lexicographers), 38 were native speakers of English. All subjects had to indicate their main FL (which, in the case of the foreigners, was English) and their proficiency level in that FL. “34 participants assessed their command of their selected L2 as ‘advanced’, 23 as ‘intermediate’ and 11 as ‘beginner’; three did not specify” (p. 4) The task of this group was to translate between their L1 and their FL (or L2), being free to choose the direction, although they were encouraged to choose an L1-L2 translation. Fifty-four did in fact opt for this type, while 17 preferred an L2-L1 translation. In both cases, English was one of the languages.

In group T, the 17 Finnish subjects, all advanced learners who were taking an intermediate course in L1-L2 translation, had to translate from their L1 into English.

In group O, each participant could choose the text to be translated and there “were over a hundred dictionaries available for them to choose from” (p. 4). In group T, the text was the same for all subjects, but there were only a two-volume BD and four English MDs available to them.

First, all subjects had to fill in a form containing questions about their L1, their proficiency level in their FL, the name of the dictionaries to be used and the title of the text to be translated. The authors admit that the subjects’ assessment of “their own linguistic competence in their chosen L2 [...] is rather unsatisfactory” (p. 5).

Since the researchers’ aim was not to investigate translation skills, but to “find out what people really do when they use a dictionary to solve a linguistic problem” (p. 2), participants were not asked “to produce a written translation, [but] simply to look up any expressions they felt were necessary to allow them to translate the passage”. Thus “few participants went through the whole text: most concentrated on a thorough preparation of a relatively short passage” (p. 3)

Atkins & Varantola chose the protocol method of investigation, but a special one (neither TAP nor a written protocol filled out by the user): subjects “worked in pairs, one partner using dictionaries, and the other recording every step of this activity on forms designed for this purpose” (p. 3). In group O, all participants were once “dictionary user” and once “recorder”, while in group T students not belonging to the group of subjects were invited to do the recording.

For each look-up, the recorders were to use a Recording Sheet. The researchers determined that a “look-up, as the word implies, designates the looking up of one entry, once, in one dictionary”, while “the term ‘search’ designates the group of look-ups (or single look-up) relating to one specific problem in the translation passage” (p. 5f.)

“The data so gathered was keyed into a database held in BDaseIII Plus; it was subsequently transformed into a Reflex database for ease of cross-tabulation.” (p. 3)

The authors recognize that their studies do not show “how the average dictionary users behave, but how the skilled dictionary user solves problems” (p. 3).

An impressive amount of data was obtained and shown in the article. They cannot be presented here.

Atkins & Varantola also show “case studies” in which they “look at the way the Finnish translators handled their frustrations with problems in L1-L2 translation”, i.e. describe how exactly some of the participants used the dictionaries.

### **Beech (1997)**

In order to examine “whether young Greek learners can find a correct translation equivalent for words they look up in their English-Greek dictionaries”, the author used the structured written protocol method. The subjects were 19 students aged between eleven and nineteen. They were divided into four proficiency groups: A) pre-intermediate; B) intermediate; C) approximately the level of the Cambridge First Certificate; D) approximately the level of the Cambridge Certificate of Proficiency.

“Several different dictionaries were used and it was expected that variations in the quality of dictionaries would be a significant factor.” As a matter of fact, the researcher noticed that the “most popular” was an LDT, which was used for “449 of the 718 look-ups reported”.

The 19 participants were “asked to record the dictionary look-ups which they made during the normal course of their language learning activities”. This means that the protocols were not supervised.

The students had to provide the following pieces of information about their look-ups: BD used; circumstance of use; word looked up; context; equivalent found; number of senses (in case of polysemous words); sense looked up and sense found; reasons for unsuccessful consultations.

“For each word that the students reported having looked up, the original context in which they had encountered it was located so that the sense in which the word was used could be ascertained, and it could be judged whether the word found was an acceptable translation.”

#### Main results:

- 92 (12.81%) of the 718 look-ups were considered incorrect. The number of consultations among subjects varied from 2 to 168, and the percentages of incorrect solutions varied between 0 and 18.
- Means of unsuccessful look-ups in the four groups: A – 9.47%; B – 14.81%; C – 19.83%; D – 7.28%.
- Means of numbers of look-ups and of percentages of unsuccessful ones in various circumstances of use: vocabulary exercise – 241 / 19.08%; reading text – 239 / 12.55%; L2-L1 translation – 45 / 8.88% (these figures refer to the sole student who reported look-ups in translation); grammar exercise – 193 / 6.21%.
- Causes of unsuccessful consultations and of incorrect solutions (in square brackets, the number of occurrences):
  - In the BD, the following was lacking: a) the entry looked for [4]; b) the sense looked for [4]; c) the derivative [1]; d) the compound [6].
  - The equivalent provided by the BD was wrong [3].
  - Students did not find the correct equivalent, although the entry contained it [4].
  - Students erred when writing down the Greek equivalent [3].
  - They chose the wrong sense [54].

- The equivalent provided by the BD, although not totally incorrect, was not satisfactory for the given context [13].

It should be highlighted that the majority (54, or 58.7%) of the 92 unsuccessful consultations were due to the choice of the wrong sense in entries of polysemous words.

### **Christianson (1997)**

The subjects of this study were 51 “Japanese university freshman EFL students majoring in computer science” (p. 26), who had been studying English for six years in high school.

They “were asked to underline all of the words that they looked up in any dictionary (L1-L2, L2-L1, L2-L2) and then used in their in-class writing assignments” (*ibid.*), this was timed and found to generally last twenty minutes. Subjects “were urged to write as much as possible in the writing sessions; their grades depended on the length and development of the writing, not on the grammatical accuracy. However, all grammatical mistakes were later circled by the teacher, and students were asked in the following class period to correct all their mistakes.” (*ibid.*)

The author explains (*ibid.*):

The writing sessions were structured in this way for two reasons. First, the time constraint should have limited dictionary use to instances when students most pressingly felt a need for dictionary assistance. [...]

Second, although students might have used some dictionary words carelessly because they knew there was no penalty for grammar errors in the first draft, they also knew that they would be expected to correct all errors, including those made in connection with the underlined dictionary words, the following week. These errors were pointed out to the students, but they themselves were required to determine the exact error and the way to correct it. Furthermore, the time allotted for this correction process was limited, and the students’ grades for the corrected and rewritten in-class writings depended solely on their error corrections. Therefore, there was incentive to get as much as possible right the first time and save work later. In this way I hoped the students’ writings would reflect a realistic balance between fluency and accuracy.

Apart from analysing the lexical items looked up, Christianson interviewed eight of his subjects “about the incorrect and correct dictionary words in their writings”. Four of the chosen students “had a lower error percentage than average [...] and four [...] had a higher error percentage than average” (p. 29). I will not summarize the details of these interviews, which are presented in p. 29-35 of the article.

On p. 30-31, the author shows the following data on each participant: total of words written in the assignments, absolute number and percentage of words looked up, absolute number and percentage of incorrect look-ups.

- For all subjects together, the figures are the following:
  - words written in all assignments (i.e. total corpus) – 41,024; words looked up – only 674 (1.6%); of these, 283 (42%) were used incorrectly.
  - categories of errors (p. 28): wrong word – 27.2%; other – 16.3%; preposition – 13.4%; article – 12.0%; plural – 10.6%; spelling – 9.5%; word form – 7.1%; tense – 3.9%.

In his discussion of the data, before questioning the conclusions of previous studies, Christianson argues that “the tiny fraction of words in the corpus that were looked up in a dictionary, 1.6% [...], raises the question of whether or not this study of dictionary use is necessary or even worthwhile. The dictionary words identified here are obviously not a major part of the overall process of these students’ FL writing production. Nevertheless, dictionaries are basic tools for FL learners. Moreover, even if dictionaries are not used as much as might be expected for some tasks, such as timed in-class writing, they *are* used by most students” (p. 35).

Unfortunately, the author does not provide general data about what types of dictionaries were used. Only in the interviews does it become quite clear that almost all subjects used BDs.

### **Grabe & Stoller (1997)**

The authors report a case study on reading and vocabulary development in a second language. They describe the first author’s experience when learning Portuguese in Brazil, especially his learning methodology. He kept diaries in which he annotated his reflections and observations on his own progress and difficulties. In the article he is called Bill. I quote those remarks that concern dictionary use:

With respect to the development of reading abilities, it is clear that Bill made reasonably good progress learning to read with the primary input being extensive reading and bilingual dictionary use. (p. 113)

The success of this study also supports the usefulness of a good bilingual dictionary for learning vocabulary and for reading comprehension. Unlike assertions of many second language teachers and teacher trainers, a bilingual dictionary is an important resource if used appropriately. (p. 114)

Bill appreciated the support gained from using the dictionary. Frequently, he felt that too much guessing led to great frustration. Perhaps, for adults, there are times when it is important to know that a word is understood accurately. The dictionary provided this “accuracy support.” (ibid.)

In their conclusion, the authors claim again that “the use of a bilingual dictionary in a consistent and appropriate manner would appear to have a positive impact on vocabulary learning and reading development” (p. 119).

### **Atkins & Varantola (1998)**

This article is also cited in subchapter 2.2 (about questionnaire surveys).

Here I summarize the part of the study related to actual dictionary use. Please see details of the whole investigation in 2.2. As was said there, one instrument was a “Dictionary Research Test”. Its questions “involve tasks where the use of a dictionary can help the learner” (p. 28). The answers to some questions were eliminated, so the database consists of the answers to twenty questions.

There were five types of tasks: “Selecting support verb for context slot”, “Selecting preposition for context slot”, “L2 comprehension”, “L1>L2 translation”, “Selecting lexical item(s) for context slot”. Three of them need not be explained. As to “L2 comprehension”,

subjects were to read a short English passage and answer five multiple-choice questions. About the translation, the authors inform: “The four passages for translation into English were different in the French, German, Italian and Spanish questionnaires, but the questions set on them [...] represented as far as possible similar levels of difficulty [...].” (p. 63)

Omitting many detailed data provided by the authors, I present the main results:

- Percentages of cases of possible doubts in which subjects, divided into four groups of proficiency in English, decided to use a dictionary (p. 33f.):

Group A	Group B	Group C	Group D	Total
11,5	14	19	17,5	16

- Percentages of cases of possible doubts in which subjects, divided also into those who had received instruction on dictionary use and those who had not, decided to use a dictionary (p. 35f.):

	Group A	Group B	Group C	Group D	Total
with instruction	12	15	17	17	16
without instruction	11	13	20	18	16

Comment: The hypothesis that students who had been taught dictionary use would consult more was not confirmed.

- Percentages of type of dictionary preferred in the tasks (p. 44f.):

	Group A	Group B	Group C	Group D
MD	40	21	19	12
BD	60	79	81	88

Authors' comment: “The greater the students' L2 knowledge, the more likely he or she was to be working with an L2 monolingual dictionary. However, [...] it is possible that the teacher in charge made sure that the monolingual dictionaries were used by the better students.” (p. 44) It should be highlighted that BDs were preferred in all groups.

- Correlation between tasks and type of dictionary (and proficiency). In the table, the numbers in the first line of each task refer to the number of consultations that would have been possible in the task, while the number in the second line indicates the percentage of possible look-ups in which the dictionary was actually consulted (p. 36-38):

	Group A		Group B		Group C		Group D	
	MD	BD	MD	BD	MD	BD	MD	BD
“Selecting support verb for context slot”	53 0%	78 1%	45 2%	171 4%	37 5%	158 8%	22 22%	159 13%
“Selecting preposition for context slot”	265 13%	390 13%	225 11%	855 13%	185 12%	790 18%	110 16%	795 15%
“L2 comprehension”	265 8%	390 8%	225 6%	855 18%	185 25%	790 25%	110 20%	795 23%
“L1>L2 translation”	265 5%	390 7%	225 7%	855 9%	185 10%	790 11%	110 14%	795 11%
“Selecting lexical item(s) for context slot”	212 22%	312 25%	180 18%	684 23%	148 26%	632 28%	88 28%	636 21%

Comment: There are big differences in actual dictionary use among the different tasks (cf. percentages in second line), but not in the choice of dictionary type. A somewhat strange result is the fact that group D, i.e. the lowest proficiency group, is the only one in which MDs were preferred to BDs (in four of the five tasks).

- Correlations between proficiency groups, dictionary type, task and successful look-ups (i.e. correct answers). The numbers in the first line of each task indicate the absolute number of look-ups; in the second line are reported the percentages of successful look-ups.

Task	Group A		Group B		Group C		Group D	
	MD	BD	MD	BD	MD	BD	MD	BD
“Selecting support verb for context slot”	0 -	1 100%	1 100%	6 83%	2 100%	13 85%	5 100%	20 65%
“Selecting preposition for context slot”	34 91%	51 78%	24 79%	112 66%	22 55%	143 64%	18 56%	121 50%
“L2 comprehension”	20 75%	32 75%	14 50%	155 74%	46 65%	194 66%	22 73%	185 47%
“L1>L2 translation”	12 67%	27 56%	16 56%	79 42%	19 42%	88 47%	15 53%	87 37%
“Selecting lexical item(s) for context slot”	46 85%	78 85%	33 73%	160 66%	38 58%	178 52%	25 56%	136 48%

Comments: In thirteen of the 20 cases (i.e. tasks by groups), the MD was more helpful than the BD, while in two the success rate was the same with MDs and with BDs. However, sometimes the differences are very small, and in three cases (in the first task), the 100% rate is based on very few look-ups.

- Success rates with and without dictionary use. (On p. 39, the authors indicate for each question how many times it was answered correctly with (= “+dict”) or without (= “-dict”) the help of a dictionary. I will present only the totals of correct answers: in the first line are the absolute numbers and in the second line the percentages.

Group A		Group B		Group C		Group D	
+dict	-dict	+dict	-dict	+dict	-dict	+dict	-dict
239	2000	397	2501	439	1717	310	1181
79%	86%	66%	67%	59%	54%	49%	40%

Comment: The table seems to show that there is a tendency for dictionaries to be more helpful for lower proficiency groups (C and D), while the high-level group (A) fared better without a dictionary. However, the authors advert (p. 40):

Did the dictionary actually help the students to find the right answer? This question cannot be answered from this table: for that, much more information is needed about virtually every look-up. It may be that the variations shown here are due to the presence or absence of the necessary information in the dictionaries the students were using. Clearly some of the students who believed (or hoped) that they knew the answer and did not use their dictionaries were wrong in that belief. Some of those who did use their dictionaries still got the answer wrong: this could be because the information needed was not in the dictionary they consulted, or because they misinterpreted what they found.

In item 5 of their article, Atkins & Varantola compare those pieces of information – which are necessary for answering the task questions – provided by the two MDs and the four BDs which had been consulted most; and, in appendix 4, they show the entries of some of the lexical items in each of these dictionaries.

Apart from the enormous quantity of data provided, one positive aspect of the report is that Atkins & Varantola attached, among other items, the contents of the Dictionary User Profile Form and of the Dictionary Research Test.

### **Khanji (1998)<sup>132</sup>**

[Diab & Hamdan (1999: 286)]

Diab & Hamdan provide only the following information:

[...] Khanji (1998) reported on strategies employed by Jordanian university students while performing a translation task from Arabic into English. Relying on Vygotsky's theory of language acquisition, Khanji tried to explain the students' dictionary-based translation behaviours. The students' strategies, he maintained, involved a 'search of one's linguistic competence prior to accessing the dictionary' (1998: 216). The study concluded that dictionaries, whether monolingual or bilingual, '... hold little promise as viable pedagogical tools ...' for those learners who depended heavily on them (1998: 217).

### **Li (1998)**

The survey part of Li's study was summarized in 2.2. Here I present the data referring to a translation test, which "was designed to mirror the real situation in dictionary use for ESP learners or practitioners" (p. 64). The subjects were 61 science students. They were required to mark the words they looked up in their dictionaries. Unfortunately, the author does not reveal what kinds of dictionaries were used. Only once does he mention those students who were "using ALD and LDOCE" (p. 75) and he remarks that "it is easier to find the equivalent between the two languages than to pick the exact meaning of sub- or semi-technical words" (p. 73). Since the questionnaire showed that most informants preferred BDs, one may assume that BDs were preferred in the translation as well.

In order to show the influence of proficiency, in some results subjects were divided into two groups according to their scores in the College English Test Band 4: "high group" (scores over 60) and "low group" (scores below 60).

Results:

- 27% of the total of 1,231 look-ups resulted in wrong translations, i.e. the dictionaries were helpful in 73% of all consultations.
- Most errors were caused by polysemous words and by words whose meaning in context was somewhat different from the meaning provided by the dictionary.
- On average, the "low group" looked up many more words than the "high group" (23.75 vs. 16.75), made more mistakes, and, because of more numerous look-ups "had less time for working on the overall presentation of the work" (p. 76).

Unfortunately, Li did not verify which errors (and how many) were caused by deficiencies in the dictionaries or were due to the students' lack of reference skills, and which had nothing to do with dictionaries. Obviously this last type of error occurred in

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<sup>132</sup> Bibliographical data according to Diab & Hamdan: Khanji, R. 1998. Interacting with Bilingual Dictionaries through a Translation Task. *Dirasat* 25.1: 211-19.

certain examples cited by Li: “*bound* was mistaken as *border*, *induce* as *reduce*, *mechanism* as *machine*” (p. 74).

### Mackintosh (1998)

This article reports on a study which was part of a master’s dissertation and whose purpose was “to gather information on how student translators use dictionaries when translating from a foreign language into a native one (L2-L1 translation), and to see what effects certain aspects of dictionaries have on them” (p. 123). The author “chose to focus on L2-L1 translation (both English-French and French-English) because it is the type of translation that is most commonly taught and practised in Canada”.

The investigation consists of two parts. Here I summarize the first study (on actual dictionary use). Please see the other one in 5.1.2.

The subjects were 15 “MA translation students” (8 native speakers of English and 7 native speakers of French) with comparable levels of proficiency in the FL and of reference skills.

Each group was requested to translate a text on economy in 75 minutes, but “there was no pressure to finish the translation” (p. 127). The two texts (one in English, one in French) had been chosen because the researcher imagined “that they had to elicit *extensive* dictionary use” (*ibid.*). Several print MDs and BDs, and an LDT, as well as the term bank TERMIUM, were provided.

The method used “combined direct observation with a think-aloud protocol”. The students’ “actions and comments relevant to dictionary use were recorded on forms designed for that purpose”, and their “verbalization was also recorded on audio tape” (p. 126).

#### Results:

- Translation strategies related to dictionary use: 60% of subjects “began to translate immediately, looking up items as they translated”; 26.66% “looked up all unknown items before beginning to translate”; 13.33% “looked up some of the unknown items before beginning to translate and looked up the rest while translating” (p. 131).
- Main purposes of 496 total look-ups: searching meaning and equivalent – 34.7%; searching equivalent – 32.3%; searching meaning – 17.5%; checking meaning and searching equivalent – 7.3%; checking meaning – 1.2%.
- Dictionaries most commonly used: specialized LDT – 57.9%<sup>133</sup>; general BD – 15.1%; specialized English MD – 12.9%; general French MD – 5.7%; specialized French MD – 5.7%. The author argues that the LDT must have been preferred because no specialized BD was provided, and she informs us that it was “especially popular among the subjects with the most professional translation experience” (p. 132).
- Part of entry most frequently used (in 362 individual look-ups in which an entry was found): definition, equivalent or both – 96.1%; equivalents only – 47.2%; definition only – 30; definition and equivalent in a single look-up – 18.5%.<sup>134</sup>
- Most frequent causes of dissatisfaction:

<sup>133</sup> Mackintosh informs us (p. 138, footnote 13) that subjects used the *Dictionnaire de la comptabilité*. In the internet I found the title *Dictionnaire de la comptabilité et des sciences connexes*, which is said to be an English-French BD. The term LDT (or hybrid, semi-bilingual or bilingualised) is not mentioned.

<sup>134</sup> The author adopts the distinction made by some other researchers between look-ups and searches (cf. Atkins & Varantola 1997 above).

- in 88.2% of the 203 cases in which the information wanted was not found, the entry was missing;
- in 148 cases “in which the subjects were only partially satisfied with the information they found, the major reasons were: there was no entry that matched the desired term exactly [...]” – 29.1%; students “wanted to verify the equivalent they found in other sources” – 14.9%; “they needed meaning discrimination between various proposed equivalents” – 12.8%; “they didn’t like the equivalents proposed in the dictionary” – 12.8%. (p. 134)
- Choice of “definitional metalanguage” (p. 134):
  - 100% of Anglophones looked for “definitions” in their L1.
  - The Francophones preferred: French – 60%; both languages – 34%; English – 6%.<sup>135</sup>

The researcher also shows “how much information the subjects consulted for a given item and how often they double-checked equivalents or other types of information they found”, but I cannot go into details here. Mackintosh concludes “that the subjects used dictionaries exhaustively” and that “they did not seem to be satisfied unless they could verify information in several sources”.

### **Momoi (1998)**

[Tono (2001: 33, 35)]

The author’s study was part of a master’s dissertation. The subjects were Japanese EFL learners, *viz.* 26 university students and 4 high school students (grades eleven and twelve). Momoi used the TAP method.

According to Tono, the results were the same as in Yokoyama’s (1994) investigation. Thus, please see them in the summary of Yokoyama above.

### **Varantola (1998)**

The title of the article alludes to translators’ use of dictionaries. In reality, Varantola’s 4 subjects were “student translators”, more precisely 4 Finnish “advanced students of translation” (p. 182), whose FL was English and who were requested to do “an L1-L2 translation of a general text within a special field but on a topic that even lay persons know something about” (p. 181). The text consisted of 477 words. The subjects “monitored and recorded their use of dictionaries and other reference sources on answer sheets which were a modified version of those devised for the large-scale dictionary use study (described in Atkins & Varantola [1998])” (p. 182). Each look-up was recorded on a separate answer sheet. “There were no time restrictions on the task: the users worked individually and each submitted a completed translation.” (*ibid.*)

Main results:

- Number of searches and look-ups: between 16 and 26 searches per student<sup>136</sup>. On average, searches consisted of 1.29 to 1.65 look-ups; 64% consisted of only one look-up. Of the total of 84 searches, 87% started in a BD.

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<sup>135</sup> Mackintosh uses the word “definition”, but it seems that in most cases she means “equivalents”, since in 73% of look-ups an LDT and BDs (both types containing equivalents) were used, and the Anglophones did not read L2 definitions at all (p. 135).

- Types of reference works used in the 128 total look-ups: Finnish-English BDs – 59%; English MDs – 37%; other works (glossary, Finnish MD or encyclopedia) – 5%.
- Purposes of the 75 look-ups in BDs: search for equivalent – 55%; search “for reassurance, additional information” – 45%.
- Purposes of the 47 look-ups in MDs: “attempt to find reassurance about something the students believed they knew” – 30%; search “for other, unspecified help in using an L2 expression” – 70%.
- Success of 122 look-ups in BDs, L1Ds or MLDs: successful – 66%. Success rate according to dictionary type: L1D – 84% (of 31 look-ups); BD – 63% (of 75); MLD – 44% (of 16).<sup>137</sup>
- Subjects’ satisfaction with the results of their 84 searches: satisfied – 76%; uncertain – 24%.

The author also deals with details and problems of the translation, but these cannot be reported here.

In her abstract, Varantola defines her investigation as “a small-scale in-depth study”. It is quite true that 4 subjects do constitute very small empirical base.

### **Diab & Hamdan (1999)**

This “case study [...] investigated how 50 Jordanian Arab university students of English interacted with words and dictionaries while reading a specialized text in linguistics” (p. 281). The 25-page text comprised approximately 9,000 words.

The authors used two research instruments: a written protocol (“dictionary use records”) and a structured interview. The subjects “were given multiple copies of a dictionary use record and were instructed to complete them as they were preparing the [text], whether on campus or at home” (p. 288). They “were requested to use one record for each word or phrase they met in the text and considered to be difficult” (*ibid.*). As to the second instrument, a “structured interview was arranged for each subject immediately after his or her submission of the completed dictionary use records”; the objective was “to provide a complementary set of data”; the answers “were recorded and then transcribed, organized, analysed and tabulated by the two researchers” (p. 289).

Main results:

- Dictionaries used: 39 different dictionaries (15 MDs, 24 BDs); students consulted between 1 and 6 dictionaries.
- Number of look-ups:
  - Total: 2,124.
  - Look-ups in types of dictionaries: MDs – 63%; print or electronic BDs – 37%. (Most of the students “used rather outdated editions of print dictionaries”, p. 297; two electronic BDs were consulted in 17.8% of look-ups)
- Types of words looked-up:
  - According to students’ opinion: non-technical or general words – 59%; technical or specialized – 15%; not sure – 26%. (The authors remark (p. 290) that apparently “the subjects found technical words less difficult than general ones”, but that this “may be ascribed to the fact that a large number of the technical terms are highlighted, then defined, exemplified, or explained in the text”).

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<sup>136</sup> As in Atkins & Varantola’s (1997) study, all look-ups done to solve one specific problem belong to one single search.

<sup>137</sup> Varantola informs us that students themselves expressed their opinion about look-up success; i.e., there was no “outsider assessment of how successful or ‘correct’ the actual translations of the problem expressions turned out to be in the translated texts” (p. 185, footnote 4).

- According to the authors: Diab & Hamdan examined the words which students could not classify and found that 366 of them were general words and 182 were technical terms, so that the percentages for both categories rose to 76 and 24 respectively (p. 289f.).
- Of general words (of which a large number were looked up in BDs), 60% were monosyllabic; “in most cases the subjects did not go beyond the first meaning” (p. 291).
- Only 41.9% of the 322 technical words were looked up in specialized MDs. Specialized BDs were not used because the students did not know that they exist.
- Types of information looked up: meaning – 85%; pronunciation – 5%. (The authors explain that the subjects were reading the text “in preparation for class discussion” and that they “would need to know either the meaning of the L2 word or its pronunciation”, p. 292.)
- “Pre-dictionary use strategy”: “90.58% of the look-ups were not preceded by any [such] strategy, i.e. the subjects went directly to the dictionary [...].” (p. 293)
- Success of look-ups (supposedly according to the subjects’ own evaluation)<sup>138</sup>:
  - Fully successful – 80%; partially successful – 11%; unsuccessful – 9%.
  - By type of dictionaries: MD – 82.5% (general MD – 82%, specialized MD – 87%); BD – 76.5% (print BD – 71%, electronic BD – 82%).

### **Jensen (1999)**

[Coelho s.d.]

Coelho summarized two studies by other researchers. One of them is Jensen’s. (All quotations are from Coelho.)

The author (Jensen) wanted to investigate the translation process, more precisely the influence of time limits on the behaviour of translators.

Only 4 of the 6 subjects were really translators, and these were divided into two groups according to their professional experience. Thus, there were three groups: a) experts (more than eight year of experience), b) young professionals, and c) “educated laymen”.

“[They all] translated three texts, each on a different topic and from a different source, from English into Dutch, their mother tongue. [...] The average length of the texts was 120 words. The participants could use dictionaries at will and worked in their own offices.”

Jensen used the TAP method. “This introspective method was supplemented with computer logging. All translations were done using Translog and concurrent verbal reporting. (Translog records all keyboard activity and saves it in a log-file.)”

Result concerning dictionary use: “[...] there was a clear difference among the three groups. The non-translators used dictionaries most, followed by the young professionals. The experts had approximately half as many look-ups as the young professionals.”<sup>139</sup>

### **Corris et al. (2000)**

This paper describes “preliminary investigations of dictionary use and usability by speakers, semi-speakers and learners of Australian Aboriginal languages” (p. 169). The authors provide the following information about such dictionaries:

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<sup>138</sup> One of the items of the “dictionary use record” was the students’ satisfaction; thus, probably “success” corresponds to, or means, “subjects’ satisfaction”.

<sup>139</sup> Ronowitz et al. (2005: 584) state that the only dictionaries used were BDs, except by one of the “non-translators”.

While some compilations of Australian languages contain thesauruses [...], alphabetically ordered dictionaries are by far the most common [...]. So far, all of these are bilingual or trilingual, with English, the language of wider communication (LWC), being one of the languages. Endangered language (EL) dictionaries are almost always bilingual, because the makers are usually not speakers. Most of the dictionaries are arranged as EL-LWC. (p. 170)  
Groups of potential user for EL dictionaries include linguists, teachers, and indigenous people. We concentrate on this last category. Indigenous people fall into different categories with different needs, depending on factors including their level of literacy in English and the indigenous language. (p. 171)

Three of the four authors carried out different studies. In 2000, their reports were in preparation. Some of the dictionaries consulted were electronic ones.

Corris et al. (2000) report that they “worked with 76 people affiliated with indigenous languages” (p. 171), that they “used two approaches to investigating dictionary usability: observation and getting people to carry out tasks involving dictionaries”, and that these approaches “produced qualitative and anecdotal, rather than quantitative data” (p. 173).

In the section on results, the authors make general remarks on dictionaries and their use and reveal some opinions and – especially – difficulties of the subjects, such as the following: many users “did not grasp alphabetical order in English, let alone in the indigenous language” (p. 175); “lengthy, detailed entries were very hard for users not familiar with dictionaries” (p. 176); “participants also had various problems with reading definitions”, due to “the use of obscure and overly technical words in definitions” (p. 177); “users had difficulty following links at the end of entries with cryptic abbreviations or symbols, SYN, ANT, etc.” (ibid.); “small font size was a difficulty for users with low levels of literacy” (ibid.). At the end, Corris et al. comment on one electronic dictionary (called *Kirrkirr*), which apparently had been designed by themselves and about which “teachers were quite enthusiastic, and saw a role for it in encouraging kids to learn Warlpiri, and in teaching dictionary skills and concepts” (p. 178).

### **Kobayashi (2000)<sup>140</sup>**

[Kobayashi (2006: 32)]

The main part of Koyabashi’s (2006) summary reads as follows:

Kobayashi (2000) partially replicated Schmitt’s (1997) study, using 40 Japanese students in the US. Half of students studied English at three intensive English programs, and the other half studied various disciplines at a university. The comparisons were made between the two groups within the study and between the subjects of this study and Schmitt’s subjects. The results show that while there was a high degree of similarity among all Japanese students (EFL students, ESL English students, and ESL academic students), there were also structured differences among the lines of experience in the language and length of residence in the US. All Japanese students most frequently used strategies such as consulting a bilingual dictionary, guessing from context, verbal repetition, and saying a new word aloud. In particular, consulting a bilingual dictionary was the most frequently used by all groups. In contrast, all groups less frequently used other

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<sup>140</sup> Bibliographical data provided by Kobayashi (2006):

Kobayashi, C. (2000). Vocabulary learning strategies of Japanese students of English in the United States. Unpublished master’s thesis, Colorado State University, Fort Collins.

Schmitt, N. (1997). Vocabulary learning strategies. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary description, acquisition and pedagogy* (pp. 199-227). Cambridge: Cambridge University Press.

strategies, such as having teacher check flash cards, the keyword method, and using physical actions.

### **Scholfield & Katamine (2000)**

This paper deals mainly with writing strategies, but dictionary use was also examined. The subjects were “20 PhD students at the University of Birmingham [...], all native speakers of Arabic and advanced learners of English”. They “did both an oral and a written picture description task in English, followed by a written description of all the pictures again in the native language”.

“For the dictionary versus no dictionary comparison the sample was randomly divided into independent groups for the written English task, with ten in the dictionary condition [...].” “[...] those in the dictionary condition had a bilingual dictionary available to them, and were asked to mark words they looked up.”

Some of the results concerning dictionary use are these:

- “[...] those with a dictionary available looked up on average 5.8 words (range 4 to 8), constituting 14.1% of the CS [communication strategies] of that group. [...] appeals to the dictionary were for the most part successful [...].”
- The use of CS was significantly less frequent in the dictionary group.
- “Mean number of avoidances was 42.7 in the no dictionary group (79.2% of CS of this group), 29.1 in the dictionary group (66.3% of their CS).” The difference is not statistically significant.

### **Whyatt (2000)<sup>141</sup>**

[Lew (2004: 43)]

Lew mentions this PhD thesis among studies in which “think aloud protocols” were used “to monitor the process of dictionary work”. He does not provide any other information.

### **Chin (2001)**

The following abstract was retrieved from [http://eric.ed.gov/ERICDocs/data/ericdocs2/content\\_storage\\_01/0000000b/80/27/d4/24.pdf](http://eric.ed.gov/ERICDocs/data/ericdocs2/content_storage_01/0000000b/80/27/d4/24.pdf) in June 2006:

This study investigated the effects of dictionary use on the vocabulary learning strategies used by intermediate college-level Spanish learners to understand new vocabulary items in a reading test. Participants were randomly assigned to one of three groups: control (without a dictionary), bilingual dictionary (using a Spanish-English dictionary), or monolingual dictionary (using a Spanish-only dictionary). A text appropriate for the students' language level served as the reading passage. Students' responses on the vocabulary learning strategies were collected from a questionnaire distributed to them regarding the vocabulary learning strategies they used to

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<sup>141</sup> Bibliographical data according to Lew (2004): Whyatt, Bogusława. 2000. *A psycholinguistic investigation into the processes of comprehension and production: A decision making approach towards the preservation of meaning in translation*. Ph.D. diss., Adam Mickiewicz University.

understand each target item. Results indicated that when a dictionary was available, students tended to consult it rather than guessing the meaning from context. Learners in the bilingual dictionary group tended to consult their dictionary more often than did those using a monolingual dictionary. However, bilingual dictionary users often did not attempt to use other learning strategies, while students in the other groups tended to use more strategies (e.g., analyzing morphemes and using cognates).

### **Al-Ajmi (2002)**

Since in several studies “English-Arabic dictionaries have been found to be inadequate tools for translation or comprehension of English texts” (p. 119), the author wanted to find out which factors (BD microstructure and others) cause difficulties for speakers of Arabic.

The subjects were “a homogeneous class of 46 second-year English majors at Kuwait University” (p. 120). Their task was to translate an English text of their choice into Arabic, being allowed to use a BD. They were asked “to avoid guessing and other non-dictionary-based strategies” and “to underline and copy the problematic items they encountered in their chosen texts onto a specially designed record card” (p. 121), on which they were to write down the respective Arabic equivalent and the sense number as well as to indicate which BD they used.

#### Results:

- The BD most used (which contained approximately 70,000 entries) was consulted in almost 90% of the total of 3,743 look-ups; the second one, a small BD with approximately 25,000 entries, was used in 10.7% of the look-ups. These two BDs had not been updated since 1967 and 1980, respectively .
- Successful look-ups: approximately 68%. (The percentages were almost the same for the two BDs, but the causes for unsuccessful look-ups were different.)
- Relation between number of senses and successful look-ups: one sense – 98%; two senses – 86.5%; 14 senses or more – 62.7%.
- Main causes for unsuccessful look-ups in the two BDs (the numbers are the percentages respectively in the big and the small BD):
  - Users’ errors:
    - failure to find the correct sense in the entry of a polysemous word – 49.6 / 28.6;
    - failure to find the (existing) entry – 7.1 / 6.3;
    - searching in the wrong entry – 4.8 / 1.8.
  - Problematic features of the BDs:
    - missing or untranslated derivatives – 10 / 10.7;
    - lack of appropriate equivalents – 5.7 / 0.9;
    - missing senses – 4 / 27.7;
    - typeface size – 1% in the large BD.
  - Difficulties due to incorrect reading:
    - misreading the problematic word – 1% in the case of the large BD;
    - misreading of word division at line endings – 0.5 / 0.9.

It should be kept in mind that the percentages of successful look-ups and of causes for unsuccessful consultations refer to very different numbers in the two BDs (90% of look-ups in the large one, 10% in the small one).

### **Nesi & Haill (2002)**

Arguing that “experimental research may require users to look up words they would not necessarily wish to look up, in dictionaries they would not normally consult, for purposes that they may not understand or subscribe to”, the authors wanted to “monitor dictionary use under somewhat more natural conditions” (p. 277f.) Thus they examined assignments of “international undergraduate students” at Oxford Brookes University. These students had been “asked to choose a text (from any source), select from the text five lexical items unknown to them, and answer a set of questions about dictionary consultation in relation to these items” (p. 278). Students were given several weeks to perform the task, out of class. As can be seen, the method employed was an unsupervised structured written protocol.

Nesi & Haill analysed the assignments “collected over a three-year period” of 89 students, most of whom were Asians (39) or Europeans (36). One of them was a native speaker (of English).

Main results:

- The 89 students owned and used more than 80 dictionaries; 63 of these dictionaries provided some bibliographical data (mainly the title); 45 of the 60 for which dates were given had been published since 1990; only 23 of those named “seem to be explicitly intended for learners” (p. 280). The dictionaries owned by more than 10 students were: OALD (30), *Concise Oxford Dictionary* (17), LDOCE (14), and *Collins Cobuild* (13). BDs were used very seldom, so that the authors claim that their investigation was “a study of monolingual dictionary use” (p. 280).
- 427 words were looked up (the entire list is attached to the article); a few of them were archaic or highly technical, but on the whole they were “a representative sample of words advanced learners at university level are likely to look up whilst reading” (p. 281).
- The 77 students who returned complete assignments looked up 390 words in all. Thirty-four subjects “appeared to have found the correct contextual meaning of all the words they looked up”. “The remaining 43 subjects were unsuccessful with one or more of their dictionary consultations, and failed to find the correct meanings of 65 words (16.4% of the total number analysed)” (p. 282).
- Categories of consultation problems: 1. The wrong entry or subentry was chosen (34 cases); 2. the information provided in the entry was misinterpreted (11); 3. subjects did not realize that the meaning indicated in the entry was slightly different from contextual meaning (7); 4. the meaning provided in the entry or subentry was “rejected as inappropriate in context” (5); 5. the word or appropriate meaning was lacking in the dictionaries that were consulted (8).

### **Nikolova (2002)**

The author reports on an investigation into vocabulary learning. I will not summarize it here because Nikolova studied the effects of the use of multimedia, not of dictionaries. However, since the subjects also consulted a dictionary, I quote certain of her remarks on dictionaries.

In the present study the subjects were motivated to use dictionary information in order to participate in the creation of a product for whose quality they were responsible. Their success – the fact that all of them completed the task and finished a multimedia unit of high quality – brings evidence that the boredom of dictionary use was somehow overcome. One speculation on the part of the researcher is that the subjects' main concern was putting together the unit. Therefore, the relatively boring dictionary consulting was perceived as only a tool in the accomplishment of a more interesting and a relatively more creative assignment. Diverting

attention from a monotonous task thus succeeded in making dictionary use part of an overall more adventurous experience, which brought good results in vocabulary acquisition.

### Nord (2002)

The empirical study reported in this PhD thesis published in book form seems to be the only investigation of the effects of dictionary use on translations done by professional translators.<sup>142</sup> The author also observed actual use of different types of reference works.

The subjects were thirteen professional translators with different native languages. They were observed for two hours during their normal translation activity (at home or at the office), during which they were asked to comment on their use of aids. Their comments (i.e. TAPs) were audiotaped and then transcribed.

Main findings concerning *actual* dictionary use:

- Dictionaries consulted: more than two thirds of all look-ups were done in dictionaries, mainly in (bilingual) technical ones (31.3%), general BDs (19.3%), and L1Ds (11.3%); other dictionary types were monolingual – dictionaries of synonyms, MLD, dictionary of English phrasal verbs, dictionary of collocations, dictionary of orthography; bilingual – phraseological, pictorial. Auxiliary texts were consulted in 13.3% of all cases.
- Frequency of consultations: during the translation of general texts, reference works were consulted on average approximately every three minutes; in the case of specialized texts, every two minutes.
- Main query types: search for equivalents – 30.3%; search for meaning (of source language item) – 21.1%; search for information on usability – 17.3%; choice of appropriate equivalent – 11.3%.
- Main types of items looked up: words – 57.3% (of which 68.8 were nouns); word groups – 39.8%; abbreviations – 2.5%.

One of the results relative to the *effects* of consultations:

- Rate of success when the subjects resorted to certain dictionaries or turned to other people: dictionaries of synonyms – 80%; general BDs – 71.1%; asking specialists via email, by telephone or in the same office – 68.8%; general MDs – 50.9%; technical dictionaries – 52.9%.<sup>143</sup>

### Nuccorini (2002)

The author explains that “it was the main purpose of the research project underlying this paper to collect and analyse data about what goes on during the composition process from a while-writing perspective with particular reference to the typology of common (linguistic) obstacles and to the role dictionaries play in overcoming them” (p. 209). The subjects were “a small number of academics” from various fields. Unfortunately, Nuccorini does not reveal the exact number. They seem to have been Italians.

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<sup>142</sup> Although Nord studied the *effects*, I did not include this investigation in subchapter 4.3, because the author did not compare use and non-use, or differences in the effects of the use of various dictionaries in the same situation, but only the success rate of consultations.

<sup>143</sup> Noting that her PhD thesis is not “accessible to scholars who do not read German”, Nord (2009) decided to “outline[s] the design and the most important results of the study in English”. She asserts that her study “was a pioneering work in that it analysed for the first time the *real* behaviour of *professional* translators in *authentic* translations situations” (p. 203).

First they were interviewed about their proficiency in English, their composition strategies and the dictionaries used. Then they were asked to write a composition and record their look-ups on a form (i.e., make a structured written protocol). Only 10% of the “small number” of academics interviewed filled in the forms. For this and other reasons, only the interviews and protocols of certain biologists (probably very few) were analysed. Indeed, Nuccorini recognizes that her study “could be considered as a pilot study of project feasibility” only (p. 227).

Main results (p. 225):

- Subjects were “aware of their linguistic problems, but unaware of the ways in which dictionaries could help in that respect”.
- Most of them “lack even basic reference skills”.

### **Livbjerg & Mees (2003)**

This report was published in a book of readings on translation, which would seem to imply that the authors’ main aim was to study the translation process. However, the subjects were not translators, but FL learners.

In the abstract, Livbjerg & Mees claim that their “article describes use vs. non-use of dictionaries by semi-professionals when translating a non-domain-specific text from L1 into L2 while thinking aloud” (p. 123).

Apparently the 10 Danish participants, very competent post-graduate students of English at the Copenhagen Business School, were considered “semi-professionals“ because they were accustomed to translating from their L1 into English, without the help of dictionaries.

The 126-word text they were asked to translate was an article in a Danish newspaper that contained certain difficulties, such as metaphors, unusual collocations and “potentially ambiguous expressions – the meaning of which had to be derived from the context” (p. 125).

While translating the text (on computers, using the software Translog), the 10 subjects verbalised their thoughts in TAPs, which “were recorded on audio cassette” (p. 126).

Half of the students (group 1) were allowed to consult two print dictionaries (a BD and an English MD); the other 5 (group 2) had to do without.<sup>144</sup> After the task, group 2 was asked to “take a short refreshment break and return“ (p. 126). Then these 5 students were requested to translate the text again, now using the same dictionaries the other group had consulted.

The authors had established three hypotheses about dictionary use, but I will only present the results, without indicating whether the hypotheses were confirmed or not:

- On average, group 1 took 80 minutes to translate the text; group 2 (when translating without dictionaries) took only 54 minutes.

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<sup>144</sup> The authors were aware of methodological problems, involving, for example, TAPs; they point out that “it is very likely that the set-up of the experiment influenced (i.e. increased) the number of dictionary consultations, but the study gives no indication that it changed look-up behaviour qualitatively” (p. 124). As for TAPs, they assert that their “study employ[ed] introspective methods developed by Ericsson and Simon (1980, 1984) and adapted to translation studies by Krings (1986) in his pioneering work [...]” (p. 124).

- In more than half of the “translation problems” encountered (53.3%), group 1 turned to the dictionaries.<sup>145</sup>
- In the second phase, group 2 consulted dictionaries in 42.2% of 121 translation problems.
- On the whole, the 10 students did 115 searches (or “consultations”<sup>146</sup>), totalling 179 look-ups; 59% of all look-ups were done in the BD.
- According to the subjects, 49 of the 115 look-ups were not helpful, while in 66 (57.4%) “the students felt the dictionaries were profitable” (p. 130).

Please see Livbjerg & Mees (2003) in 4.3 for the effects of dictionary use on translation quality.

### **Conceição (2004a)**

Like Hulstijn (1993), Conceição wanted to examine to what extent different tasks influence dictionary use and how this use is reflected in word retention. Apparently the dictionaries were BDs.

Fourteen Brazilian students who were enrolled in an English reading course were assigned to one of two groups. They were instructed that after the reading of a text one group was to write a summary (summary group, SG), while the other one to answer comprehension questions (QG). All of them were asked to write down the words looked up in the dictionary.

In the analysis, Conceição noted that the SG had made, on average, 17.29 consultations, and the QG 28.14. Like Hulstijn (1993), the author thinks that for writing a summary a global comprehension is sufficient, so the students did not need to consult the dictionary very often.

Then she selected 10 words which had been looked up by all subjects and administered a retention test twenty days later. In this test, the target words were presented in context (one short paragraph for each), and the students were asked to provide an English synonym or a Portuguese equivalent.

The mean of correct answers was 2.4, considered very low by the author, who concludes that “looking up a word in the dictionary does not contribute efficiently to the retention of vocabulary items in memory” (p. 137).

Since, during the reading session, six of the seven students in each group had written down the meaning of the looked-up words, Conceição concludes that “the combination of the two strategies (look up and write down) does not seem to yield positive results [on retention tasks]” (p. 138).

Unfortunately, the researcher did not compare use and non-use or the effect of use of different dictionary types.

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<sup>145</sup> Following Krings (1986: 113), the authors consider “translation problems” as “translation units”. “A translation unit is any word or phrase in the text, or any aspect of such a word or phrase, which is verbalised by any single participant and for which he or she expresses any degree of doubt about its proper translation.” (p. 129)

<sup>146</sup> The authors define “consultation” as Atkins & Varantola (1997) define “search”, i.e. one consultation/search may consist of one or more look-ups.

### **Pieścikowski (2004)<sup>147</sup>**

[Dziemianko & Lew (2006a)]

Dziemianko & Lew provide the following summary of this study:

Pieścikowski (2004) applies Atkins & Varantola's [(1997)] methodology to three small groups of Polish university students, asking them to record details of dictionary work while engaged in L2-L1 text translation. The results indicate that the principal reason for consulting dictionaries in this setup is to locate an L2 translation, and the second most common reason is to check the translation candidate. Only a very small minority of dictionary searches have been found to serve other purposes. Also, the results reconfirm the clear dominance of the (general) bilingual dictionary for this type of task. Finally, most users are satisfied with the results of their dictionary consultation, and, more generally, with their dictionaries.

### **Wingate (2004)**

The author “reports on a small-scale introspective study of intermediate learners of German using bilingual and monolingual dictionaries for reading comprehension” (p. 5). The subjects were 17 Chinese university students in Hong Kong, who had received approximately 500 “lessons” (supposedly hours) in German and whose medium of instruction at high school had been English, so that Wingate considered them experienced dictionary users.

Their task was to read two authentic but not very difficult texts (of respectively 293 and 245 words). The researcher divided them into three groups, each of which worked with different “dictionaries”: group 1 with an English-German dictionary, group 2 with a German MLD (*Langenscheidts Großwörterbuch Deutsch als Fremdsprache*) and group 3 “with word definitions which were especially designed for a related research project” and which “follow closely the style of Collins COBUILD English Dictionary [...]” (p. 7).

“The subjects read the texts in individual sessions with the researcher and were asked to think aloud during the process of identifying unknown words and looking them up in the dictionary.” The think-aloud method was practised beforehand and during the reading task the students “were repeatedly encouraged to say aloud everything that entered their minds, without trying to edit or analyse their thoughts” (*ibid.*). The sessions were tape-recorded and the TAPs were transcribed.

The author divided the look-ups into successful and unsuccessful, but she does not reveal on what this evaluation is based. She analysed a total of 384 look-ups, of which 127 had been done in the BD (group 1), 124 in the German MLD (group 2), and 133 in the entries with definitions “in full sentences and in natural language” (group 3).

Wingate remarks that the data “revealed superficial and partial reading of dictionary entries to be the most frequent behaviour” (p. 7) and that “the subjects lack basic strategies that are crucial for successful dictionary consultation” (p. 10). In particular, she noticed the following:

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<sup>147</sup> Bibliographic data according to Dziemianko & Lew: Pieścikowski, Mateusz. 2004. The use of dictionaries by university students: Users' habits and skills. M.A. diss., Adam Mickiewicz University.

- The students failed to locate the entry for three types of words: compound nouns (27 look-ups, only 18.5% successful), idiomatic phrases (all 7 look-ups were unsuccessful); past participles (no success in all 6 look-ups).
- Unsuccessful look-ups: in group 1 – 39% of all searches; in group 2 – 55%; in group 3 – 21.17%.
- Looking up the meaning in BDs: In those cases in which the word was monosemous or the first sense of a polysemous word was the correct one, 71.4% of 63 look-ups were successful, but when the appropriate sense of a polysemous word was not at the beginning of the entry, only 44.4% of 18 look-ups were successful.
- In the case of groups 2 and 3, who needed to understand definitions given in the FL, Wingate curiously uses the term “equivalent”, explaining that she means “lexical items that carry enough information to explain the unknown word in the reading context” (p. 11, footnote 4). She provides the following results: a) when the entry contains such an “equivalent”, 76.6% of 47 look-ups were successful in group 2, 67.2% of 61 in group 3; b) when there was no “equivalent” or the “equivalent” was unknown, 18.3% of 60 look-ups were successful in group 2 and 50.8% of 65 in group 3. As can be seen, in situation (b), in which there was no known “equivalent” (or synonym), so that the whole definition had to be read, group 3 – which had access to “full-sentence definitions [that] are linguistically easier” (p. 9) – fared much better.
- In groups 2 and 3, 23% of the unsuccessful consultations probably were due to the “kidrule” strategy (cf. Miller & Gildea 1984 in 3.1), i.e. to the fact that the users selected “familiar elements from an entry with little or no regard for appropriateness” (p. 9). In group 2, in 11% of all consultations this strategy was used; and in group 3, in 7.5% of all look-ups.
- The users of the BD “spent considerably less time on their [unsuccessful] searches”, which leads Wingate to claim that they “were more inclined to give up the search if a suitable meaning could not be found immediately” (p. 9). “It seems that bilingual dictionary users expect quick answers, while monolingual dictionary users are prepared to invest more time.” (p. 10)

Wingate acknowledges that being “based on qualitative research, the results cannot be generalised to other languages and in other settings” (p. 11).

### **Frankenberg-Garcia (2005)**

The word “researchers” in the title of this article must be understood as “dictionary users”. The author wanted to find out what kinds of reference works FL learners turn to when needing to look up words in an L1-L2 translation.

The subjects were 16 “fourth year students [...] pursuing a degree in Translation at a Portuguese university” (p. 337). They were all “above average users of English”.

They “were given a newspaper article to translate from Portuguese into English, while keeping a detailed record of the problems they encountered and the resources they used in their attempts to overcome them” (*ibid.*). They were asked to fill in “a modified version of the answer sheet utilized by Varantola (1998)” (p. 338). The assignment was explained during a fifty-minute class. The students were “instructed not to ask anyone for help”, but they were free to use any reference materials. Since their first year, “they had been stimulated to use not just different types of dictionaries, but also corpora, term banks, search machines and other resources” (p. 337).

Main results:

- The 16 students looked up a total of 146 lexical items. They themselves considered 83% of consultations to be helpful, but the author judged only 65% as successful.
- Only in 9 of the 25 unsatisfactory look-ups did they attempt another consultation.
- Purposes of the 146 look-ups: finding an L2 equivalent – 58%; confirming a hunch – 18%; finding a suitable collocate – 16%; choosing the best alternative – 4%; checking spelling – 4%.

- Resources most used: Eurodicautom (the online multilingual term bank of the European Union) – 38%; BDs – 17%; MLDs – 11%; dictionary of collocations – 10%; two English general language corpora – 9%; search engines – 6%; news archives – 3%; COMPARA (a Portuguese-English parallel corpus) – 2%; others – 4%.
- Evaluation of look-ups: For each type of resource, the author indicates the percentages of successful look-ups (leading to correct translations – first number) and of their helpfulness, in the students' opinion (second number): Eurodicautom – 58 / 69; BDs – 60 / 92; MLDs – 69 / 88; dictionaries of collocations – 86 / 93; English corpora – 69 / 92; search engines – 67 / 89; news archives – 100 / 100; COMPARA – 100 / 100.

### **Lai (2005)**

Only three subjects participated in the study reported in this master's dissertation.<sup>148</sup> Here are the main parts of the abstract available on several webpages:

In the EFL learning environment with deficient authentic target language input, dictionaries as one of the essential learning aids play a crucial role in Taiwanese EFL learners' different stages of English learning. Also under the profound influence of the grammar translation method, EFL learners in Taiwan rely on dictionaries for translation aid and learning of English vocabulary. [...] This study thus attempts to investigate Taiwanese EFL learners' dictionary use in English reading tasks [...]. Three students of different majors from a university of southern Taiwan participated in the study. As the primary instrument, the interviews were conducted with three participants to understand their lookup procedures and dictionary strategies while reading English. Document analysis and observations, in addition, are conducted as the secondary instruments to garner additional information and further triangulate the interview data collected over a six-week period of formal study following the pilot study. The results of the study suggested that (1) English dictionaries are frequently used regardless of students' English proficiency levels; (2) English-Chinese bilingual dictionaries are used most frequently for the aid of Chinese translation; (3) multi-word units and polysemous words would exacerbate problems with dictionary use; (4) sense selection from a dictionary entry is the most likely occasion when errors arise. [...] the study also showed that less proficient learners tended to use memory strategies more often, and are less able to monitor their dictionary use, than proficient learners, and as a result do not seem to benefit from dictionary consultation as expected.

### **Ronowicz et al. (2005)**

The title of this article is quite explicit. For laymen, it should only be explained that SLT is "source language text" and that "Frequent Lexis Store" is a term used by Bell (1991) which means "lexical knowledge".

The authors wanted to verify the relation between level of lexical proficiency, dictionary use, comprehension of the source language text and translation speed. They distinguish three types of "translators": "novice translators" (NTs), who were first semester students in a translation course, "paraprofessional translators" (PPs), i.e. "completing students with good or very good final results and former students already working in the

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<sup>148</sup> On webpages in English, the university and town where it was defended is not indicated. This information may be available on pages in Chinese. According to Wang's (2007) references, it was defended at Southern Taiwan University (which is located in Tainan).

profession but with less than 3 years experience”, and “professional translators” (PTs), who had between four and eighteen years of experience in professional translation (p. 585).

Ronowitz et al. used the TAP method. The protocols were tape-recorded and video-recorded.

The researchers had at their disposal fourteen subjects. However, for several reasons, the TAPs of only 9 of them could be analysed. The L1 of these was Japanese or Korean. Each proficiency group (NT, PP, PT) was made up of 3 subjects.

First they were administered a vocabulary test of 40 words. As was to be expected, the PTs obtained the best score on average, and the NTs the worst. However, two of the PPs were better than one of the PTs, and one of the NTs obtained a better score than one of the PPs.

For the main task, the researchers chose a 378-word text from *The Economist*. It had to be translated into the subjects’ L1 in ninety minutes.

Results (based on the 9 TAPs) concerning translation:

- “[...] the higher the content of the Frequent Lexis Store in the domain of the source language, the higher the speed of translation.” (p. 591)
- The PPs and PTs, but not the NTs, seemed to have “read the whole text before they started working on it unit by unit” (p. 590).

For reasons which the authors do not reveal, they obtained reliable data on dictionary use only in 6 TAPs. Thus the following results relate to only 6 subjects (3 Japanese and 3 Korean, 2 from each category), who had access to nine (Japanese) or eight (Korean) different types of dictionaries (e.g. small BD, large BD, English MD, Korean MD):

- The 2 NTs used dictionaries much more frequently than the other translators (53 and 44 look-ups, respectively; the PPs and one PT made 32 or 33 look-ups, while the other PT, a “highly ranked international conference interpreter” used dictionaries only 17 times).
- “The higher the content of FLS, the fewer dictionary consultations were needed” (p. 588).
- Types of dictionaries used in 212 look-ups: large BD – 56.5%; small BD – 21.7% (one of the NTs was the only user of this BD); MD of economics – 9.9%; English MD – 9% (used only by PTs and by one of the PPs); Japanese or Korean MD – 1.9%; medium size BD – 0.9% (used by one of the NTs). The preference for BDs, even among PPs and PTs, is quite clear; only the interpreter did one more look-up in an English MD than in a BD. Twenty-two of the 23 consultations in MDs were made by PPs or PTs, and 71.4% of 21 look-ups in specialized MDs were made by the same groups. Rarely did the NTs consult more than one dictionary.
- “Both professionals and para-professionals were very cautious about the accuracy and naturalness of word usage, they did not always trust equivalence obtained from the dictionaries [...].” (p. 590) The 2 PTs “checked on words they had in their Frequent Lexis Store, which indicates they sensed potential problems [...]” (*ibid.*).

Unfortunately the researchers did not investigate the influence of dictionary use on translation speed and quality; and it is a pity that the data refer to only 6 subjects.

### Gomes (2006)

In this master’s dissertation, the author reports on a study in which she investigated how Brazilian learners of German use BDs during a composition. This investigation is one of very few about the circumstance of use in “composition” (cf. 4.2).

The subjects were 80 Brazilian adults learning German in a Brazilian language school. Thirty-five of them were in the fifth semester (group 1, G1), 24 in the sixth (group 2, G2) and 21 in the seventh or eighth (group 3, G3). Gomes claims that it was not possible to apply a proficiency test, but that probably most G1 students were less proficient than most members of G3.

Each group wrote a composition on a different subject, according to the content of their classes. They could use BDs of their choice. The author did not take into account MDs, because the students were not accustomed to them.

They were requested to indicate the BD used and to annotate on the margin of the composition sheet the words looked up and the information obtained. They were also asked their opinion about their BD.

Having analysed the compositions, Gomes calculated, among other things, the percentages of successful, partially successful and unsuccessful look-ups. She considered successful those leading to correct use in the composition; while in the case of the partially successful look-ups the appropriate word was found, but the students made some mistake in employing it, although this did not affect comprehension.

The researcher also verified in the BDs whether the not completely successful consultations were due to subjects' errors or to dictionary deficiencies.

#### Main findings:

- One BD (*Langenscheidt Taschenwörterbuch – LTW*) was used by 77.5% of the students; the second one, a small BD, was consulted by 15%. Curiously, in G3 the small BD was used by 19% of the subjects.
- On the average, the G1 students looked up many more words than the others. Mean percentages of look-ups in relation to the number of words written in the composition are as follows: G1 – 8.67%; G2 – 5.3%; G3 – 5.63%.
- Types of information sought in the total of 548 look-ups by the 80 subjects: equivalent – 76.5%; spelling – 9.1%; gender – 7.8; plural form – 3.65%; verbal tense – 2.55%; noun inflection – 0.37%.
- The search for equivalents was significantly higher in G1 than in G2. G3 students also looked for equivalents less frequently than those of G1, but the difference was not statistically significant.
- Look-up success: successful – 51.6%; unsuccessful – 32.1%; partially successful – 9.85%; unclassifiable – 6.4%. The worst results occurred in the searches for equivalents: successful – 42.72%; unsuccessful – 37.7%
- Causes of 230 not completely successful look-ups: dictionary deficiencies – 55.65%; students' errors – 38.3%; unclassifiable – 6.1%. In the case of equivalents, dictionary deficiencies rise to 60.7%.
- In the cases of dictionary deficiencies, the differences between (larger and smaller) dictionaries was not statistically significant.
- Students' opinions:
  - 92.5% thought that the BDs were helpful.
  - Types of information which helped most: equivalents – 57.1%; spelling – 14.3%; gender – 12.2%.

Gomes provides many more data, but they cannot be presented here.

#### Höfeling (2006)

Please see general information on this doctoral thesis in 2.2.

The author submitted a questionnaire to Brazilian students of English.

In the third part of the questionnaire, the subjects were requested to answer questions about a passage of a literary text. Höfling did not evaluate the outcome, i.e. she did not verify how many answers were correct. She only wanted to find out how much the students understood without the aid of dictionaries and to what degree later consultations in MDs, BDs or LDTs improved comprehension.

Thus, first the subjects had to answer a few questions about the text (title, general idea, some details, meaning of certain words) without using dictionaries. Then they could consult their own dictionary to answer other questions, about the content and about the meaning of lexical items. They were asked write down the words looked up and the information obtained. In more than forty pages, the author presents the subjects' answers to each question.

Höfling also selected the answers of six students – each of whom had used a different dictionary – and comments on them. These details cannot be presented here.

Then the researcher again provides data on 150 subjects, about their comprehension of certain parts of the text and about the words looked up. In the final part of her thesis, Höfling remarks (p. 259) that sometimes the look-ups were successful, while in some cases the students had difficulties, so that the teaching of reference skills to the subjects would be necessary.

The thesis contains still another study, in which the author employed the TAP method. She selected 10 of the most proficient students to “exemplify dictionary use strategies and to confirm [or not] the information obtained in the questionnaire” (p. 290), i.e. in those parts of the questionnaire whose data were presented in 2.2. The 10 subjects were requested to read another part of the above-mentioned literary text and verbalize their difficulties and look-ups. The TAPs were tape-recorded.

In one subchapter of her thesis, Höfling first presents parts of the protocols of two students and then analyses the 10 protocols as a whole. However, she does not present general results concerning the subjects' strategies or the influence of dictionary use. On the other hand, the thesis is indeed rich in details.

### **Laufer & Levitzky-Aviad (2006)**

This study is described in 4.4 because the authors investigated mainly the effects of dictionary use.

### **Azorín Fernández (2007)**

In this paper, the author reports not only on questionnaire studies already described in Azorín Fernández (2000, 2000a), but also on an investigation of actual dictionary use, which I briefly summarize here.

The subjects were three groups of Spanish secondary school students (aged fifteen or sixteen) who had to carry out some activities in their L1 class.<sup>149</sup> One group of 24

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<sup>149</sup> More exactly, they were in their fourth year of ESO (Enseñanza Secundaria Obligatoria, Compulsory Secondary Education).

students had to do without the help of dictionaries, while another group, of 22 students, were allowed to use a specific L1 school dictionary (*Diccionario Secundaria y Bachillerato*), which all of them owned. The 21 students of the third group, who were also allowed to use the dictionary, heard an explanation of its features and contents in a 50-minute session before the activities. All those who consulted the dictionary were asked to indicate what they had looked up.

Unfortunately, the author does not distinguish the data of the two groups that were allowed to use the dictionary. Besides, since no test was administered to verify the difference between use and non-use, one may ask why one group was not allowed to consult it.

#### Findings:

- Information most looked for: meaning/use – 43%; spelling – 33%; morphosyntax – 24%.
- Specifically, the following pieces of information were sought most: latinisms, style, anglicisms, part of speech, synonyms/antonyms, word family, homophones, numerals, idioms, gender.

#### **Cote González & Tejedor Martínez (2007)**

The authors report on three studies – which they call “experiments” – carried out in Spain in the academic years 1995-1996, 1996-1997 and 2000-2001. The aim was “to show the importance of dictionary use in teaching and its role as a tool for learning (mainly) vocabulary and word grammar” (p. 148). The subjects’ FL was English.

In the first study, 50 students filled out a questionnaire in which, among other things, they had to assess their dictionary skills. Then several activities were done in class using BDs. They showed that some of the self-assessments were wrong and that “the learners’ ability to use a dictionary was not efficient” (p. 151).

In the second study, 50 high school students, aged 15-17, were asked to translate two short texts, one from English into Spanish, the other one from Spanish into English. The texts contained a number of lexical items that were not part of the students’ active vocabulary. Subjects were also requested “to note down the words they looked up, the procedure followed in the search, and the results they obtained” (p. 152). In their analysis of the data, the authors assert that mistakes were due either to dictionary deficiencies (insufficient information) or to the students’ behaviour: the students tended either “to pick up an equivalent similar in form to a Spanish word” or to “choose the first one in the entry” (p. 153). Sometimes they did not consult the BD because they thought they knew the word.

Forty-six students aged 12-14 participated in the third study. They had not only to translate some sentences from English into Spanish and vice versa, but also to do four short lexical and grammatical exercises. The authors comment on some of the translations and exercises and conclude that the problems were very similar to those encountered in the second study.

#### **Durão & Zacarias (2007)**

The subjects of this study were 5 Brazilian university students who were pre-intermediate learners of English. They were asked to write a dialogue (in English) using

certain lexical items. They were also requested to write down their difficulties and details of their consultations of Portuguese-English school dictionaries. After this task, one of the authors analysed the dialogues, marking several types of errors (e.g. lexical or grammatical ones), and then asked the students to improve them with the aid of the BD.

The researchers show how the subjects proceeded in the case of seven (Portuguese) target words or expressions. They then discuss certain general causes of difficulties, *viz.*, false friends, polysemous words, idioms, and grammatical information.

### **He (2007)**

The following summary is provided in the abstract:

This study investigated, with a think-aloud protocol, how four college Chinese learners of English actually used dictionaries when doing L1–L2 (Chinese–English) translation. The research questions were: (1) What are the target lexical items for dictionary consultation?, (2) What types of dictionary do the subjects use?, (3) What are the purposes of dictionary use?, (4) How do the subjects utilise the dictionary information?, and (5) What is the effect of dictionary use?

The main findings were: (1) most of the target lexical items for dictionary consultation were Chinese, most of which are difficult to express in English; (2) the use of the Chinese–English bilingual dictionary prevailed in the translation task; (3) searching for English equivalents of the Chinese lexical items was the primary purpose of dictionary consultation; (4) most expressions utilised in the subjects' target language translations were English definitions of the Chinese headwords in the dictionaries consulted, the typical means of utilising the dictionary information was the direct transfer method, and the first-equivalent tendency was prevalent; (5) dictionary use showed a positive effect in terms of appropriateness of the expressions used in the subjects' translations.

### **Loguercio (2007)**

20 Brazilian university students who were taking Reading Courses in French participated in this study. In addition to answering a questionnaire about their dictionary use and their opinion of the dictionaries they consulted, they were asked to answer some questions on lexical items of three French texts. The author shows their responses and how the French-Portuguese BDs that had been consulted deal with those items. She concludes that the BDs do not satisfactorily meet the students' lexical needs.

### **Law (2009)**

Since this PhD thesis is available on the internet, I quote only a few sentences from the abstract:

[...] The dictionary is an indispensable tool to translating. [...]. In order to reveal the situation in Hong Kong, this case study attempts to investigate the dictionary use pattern of 107 translation students from five local universities for Chinese to English translation, and the dictionary consultation process of four respondents. Triangulation methods were employed: questionnaire survey, interview, think-aloud protocol, and performance exercise. A coding system for think-aloud protocols has been adopted from Thumb (2004), with modifications for Chinese-English

dictionary use for production. Results found that most of the respondents had not been trained to use the Chinese-English dictionary, and that they had difficulties in using it for Chinese to English translation. Curricular assessment discovered a gap between student needs in dictionary skills and the curriculum. [...]

### **Nied Curcio (2010)**

In the main part of the abstract, the following information is provided:

After an introduction considering the translation process, focussing on the difficulties that arise and the role played by the use of the dictionary, the author presents an empirical study (with methods of qualitative research) relating to the use of the dictionary during translation exercises in classes of German as a foreign language. The main emphasis is on the experiences and the comments of the students, e. g. the choice of the dictionary, the frequency of the dictionary use, the translation problems and the more frequent errors triggered by an inadequate dictionary and / or use of the dictionary. The author then discusses studies which demonstrate how useful it can be for the foreign language student to discuss and to be trained in the use of the dictionary in an explicit way.

The subjects were 18 Italian university students. They had been studying German (at the university) for a little over two years, but were not majoring in German. They translated two short texts (German-Italian and Italian-German) and responded to a questionnaire.

## 4. Studies of the effects of dictionary use

In certain of the studies summarized in chapter 3, tests were administered, and in these cases generally the subjects themselves or the researcher judged whether the look-ups had been successful. In my opinion, such studies do not measure the effects of dictionary use.

The influence, or effects, of dictionary use can only be measured in certain kind of experiment (cf. 1.3.5.b) in which use is compared to non-use or the use of different (types of) dictionaries is compared. Such studies (restricted to the use of print dictionaries) are reviewed in this chapter, as well as in 5.1.2 and 5.2.2.

Here I have divided up the investigations according to circumstances of use: reading, writing, translation, and vocabulary learning.

### 4.1 Reading comprehension

In the early 1980s, vocabulary acquisition was a neglected aspect of language learning, as the title of Meara's (1980) article suggested. Since then, many authors have dealt with vocabulary; in English alone, the following may be cited: Allen (1983), Gairns & Redman (1986), Carter (1987), Carter & McCarthy (1988), Nation (1990), Arnaud & Béjoint (1992), Coady & Huckin (1997), Schmitt & McCarthy (1997), McCarthy (1998), Nation (2001), Thornbury (2002). In recent decades, text books often include one part devoted to vocabulary learning. Wilkins (1972: 111) somewhat exaggerated when he said that "without grammar very little can be conveyed, without vocabulary nothing can be conveyed"; but it is indeed true that vocabulary is essential to communication.

Nevertheless, there are theorists and teachers who, in the field of reading comprehension, give more importance to reading strategies, especially inference or guessing, than to vocabulary. In many studies, both theoretical and empirical, dealing with such strategies, the authors stress the importance of inference. Summers (1988: 112) mentions "the prevailing view that newly encountered words should only be decoded by means of contextual clues". Knight (1994: 285) points to the same attitude: "Although many students express reliance on dictionaries [...] many educators and researchers discourage the practice, advising students to guess at word meaning and to use the dictionary only as a tool of last resort [...]."

However, Laufer (1997: 31), for example, emphasizes the importance of vocabulary for reading: "By far the greatest obstacle to good reading is insufficient number of words in the learner's lexicon. Lexis was found to be the best predictor of success in reading, better

than syntax or general reading ability. Whatever the effect of reading strategies is, it is short-circuited if the vocabulary is below the threshold [...].”

As to guessing, Summers (1988: 112) asserts that “unknown words within a text [...] are very often not deducible from contextual clues”, and Kelly (1990: 203) opines that “[...] unless the context is very constrained, which is a relatively rare occurrence, or unless there is a relationship with a known word identifiable on the basis of form and supported by context, there is little chance of guessing the correct meaning”. Laufer (1997: 27) thinks that it cannot be taken for granted “that guessing in L2 is [...] possible with most unknown words, and that successful guessing depends mainly on the learner’s guessing strategies”. She then describes certain factors which “interfere with the guessing attempts of the reader” (“nonexistent contextual clues”, “unusable contextual clues”, “misleading and partial clues”, “suppressed clues”). While the authors quoted up to this point were dealing with FL reading, Schatz & Baldwin (1986) examined the same topic in L1 reading and came to the conclusion (which is the title of their article) that “Context clues are unreliable predictors of word meaning”.

I conclude these considerations on vocabulary and inference with a quotation from Hulstijn (1993: 142):

Poor reading pedagogy [...] often makes the following three errors [...]. First, it wrongly leads students to believe that the meaning of all unfamiliar words can be inferred on the basis of contextual clues. Second, it encourages students to adopt wild-guessing behavior rather than a critical inferring behavior. Finally, it fails to teach students to conduct the necessary final step in the inferring procedure, namely to check the correctness of their inference, in cases of doubt, by consulting a dictionary [...].

It should be clear by this point that guessing – although it should indeed be taught – frequently is not possible or does not lead to correct understanding and that, therefore, the use of dictionaries is necessary.

Before beginning to summarize studies on the effects of dictionary use in reading, I should point out that except for Miller (1995), all these investigations dealt with reading in an FL.

### **Bensoussan, Sim & Weiss – 1981**

These authors’ study, published in 1984, is mentioned here because in certain articles it is referred to as being from 1981. Please see Bensoussan, Sim & Weiss (1984) below.

### **Bensoussan, Sim & Weiss (1984)**

This study was first reported during the 6th International Congress of Applied Linguistics, held in Sweden in 1981 (cf. the references in Bensoussan 1983 and in Coura Sobrinho 2000).

It is one of the investigations on dictionary use most commented on. More or less detailed summaries are provided, e.g., in Hartmann (1987: 24), Ripfel & Wiegand (1988:

507f.), Dolezal & McCreary (1999: 1), Nesi (2000: 13-16), Tono (2001: 26f.) and Thumb (2004: 10 f.).

The number of subjects (1,501) is still the largest in studies on the effects of dictionary use. As a matter of fact, the authors report on three separate studies carried out in Israel between 1977 and 1979, with different subjects, all EFL learners.<sup>150</sup>

In the first one, conducted at Ben Gurion University, there were 91 participants; in the second (University of Haifa), 670; and in the third (same university), 740. All subjects "had had the equivalent of seven years of high school English" (p. 256). The L1 of most of them was Hebrew.

In the three investigations the same method was employed: the students were asked to read one or more texts and answer multiple-choice questions about the content.

In the first study, the 91 subjects read three texts (500-700 words each). "Each text was read under one of 3 conditions: (a) without a dictionary (b) with a monolingual dictionary (c) with a bilingual dictionary, the conditions being selected randomly" (p. 265). In all three cases, the task had to be completed within one hour. "For the first 20 minutes, students were given the text and asked to indicate [...] each unknown word they intended to look up [...]. They were then given [...] ten questions; they indicated the words which were actually looked up [...]. They also indicated the part of speech of the unknown word." (p. 266)

In the second study, the students read one 600-800 word text and had to answer twenty questions. Because of the large number of participants, "five equivalent tests were given in order to avoid cheating" (p. 267). This time, the subjects could choose the condition (with MD, with BD or without dictionary), and were allotted two hours. They had to indicate the choice of dictionary and the time spent taking the test.

Surprised with the results, the researchers replicated the test with 740 other students.

#### Results of the first study:

- "No significant difference was found among test scores [...], regardless of which dictionary type was used or not. (One-way ANOVA,  $p = ns$ )." (p. 266)
- The students looked up many fewer words than they had indicated beforehand: in the MD – 5 (of 55 indicated); in the BD – 13 (of 62).

#### Results of the second and third study:

- Again "no significant relation was found between students' test scores and dictionary use" (p. 268).
- Choice of dictionaries: BD – 59%; no dictionary – 21%; MD – 20%.
- No significant relation was found between dictionary use and the time taken to complete the task. However, BD users tended to be slowest and those who did not use any dictionary tended to be fastest.
- There was no significant relation between test scores and time taken, but slower students appeared to get the lower scores.

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<sup>150</sup> Here are the figures on participants in other studies with a similar or larger number of informants or subjects: 1,500 elementary school pupils participated in Nesi's (1999a) study on the effectiveness of different forms of presentation of grammatical information (cf. 5.1.2). The investigation with the largest number of informants (1,601) was a questionnaire survey, reported by Tall & Hurman (2000). A total of 1,789 students and teachers were the informants in several questionnaire surveys described by Azorín Fernández (2000, 2000a).

In their conclusions, the authors try to find explanations for the surprising result that dictionary use had no effects on reading comprehension.

As mentioned above, their study has been cited frequently; but it has also been criticised (cf. Zöfgen 1994: 50, Ripfel & Wiegand 1988: 508). Tono (1989) and Nesi & Meara (1994), who also detected deficiencies in the investigation, conducted similar studies.

### **Tono (1989)**

The report on this study was republished, in a slightly modified version, in Tono (2001: 75-83). My summary and all references are based on that new version.

Pointing to certain deficiencies in previous research, the author mentions Bensoussan, Sim & Weiss (1984), who “did not control the questions in terms of degree of relevance do dictionary consultation” and who “did not report in detail how far the tests required accurate knowledge of particular words, which would make a difference with or without a dictionary consultation” (p. 75). Thus he wanted to carry out a study with an improved methodology. He recognizes however that “Ideally we should conduct a longitudinal study of dictionary users, but in this study we will examine the effect cross-sectionally, using two groups of users with different dictionary use experience.” (*ibid.*)

Since in Tono’s native Japan, few learners at that time used MDs, the researcher investigated the effects of the use of BDs.

The subjects were “17 first-year and 15 second-year junior high school students”, who had received instruction in basic dictionary skills and had been encouraged to use dictionaries from the beginning. They were also accustomed to reading a lot in English and translating into Japanese. Because of this, the second-year students (group 2, G2) were much more proficient in English and more experienced in dictionary use than the first-year students (G1); and they used large BDs, while those of G1 preferred small ones. Nevertheless, in a test on reference skills (different for each group), G1 fared better than G2; however, this can be explained by the fact that the test for G2 was more difficult (at least, the BD used was larger and more complex).

Then two reading comprehension tests were administered to each group. They consisted of a short English text (apparently the same in both groups) and ten multiple-choice questions. The first text had to be read without consultation, while in the second test BDs could be used. The dictionaries were those to which the students were accustomed, i.e. a small one in G1, and a larger one (“designed primarily for senior high school students”) in G2. Tono analysed the data statistically.

#### Results:

- “The subjects performed better in reading comprehension with dictionaries than without. The standard deviations in [test 2] were much smaller than [in test 1], indicating that with the help of dictionaries the subjects performed more uniformly well than [without].” (p. 79f.)
- In G1 (= less proficient), “those who are good at handling dictionaries perform better in reading comprehension than those who are not [...]. On the other hand, with the increasing amount of experience of dictionary use, those who can use dictionaries more effectively can outperform those who read *without dictionaries* in reading comprehension” (p. 81f.).

Stating that the results appear to be contradictory to those of Bensoussan, Sim & Weiss's (1984) study, Tono points to the differences between the two investigations (e.g. methodology and types of subjects and of dictionaries). One may add that his results are based on the scores of only 32 subjects. Nesi (2000: 17), at the end of her summary of Tono (1989), mentions certain shortcomings of the study. Tono himself admits that certain factors "need further examination before any conclusive statement can be made" (p. 82).

### Nesi & Meara (1991)

After summarizing the studies reported in Bensoussan, Sim & Weiss (1984) and criticising certain aspects, the authors assert that they "decided to recreate the conditions of [that investigation], working on a smaller scale but paying particular attention to the interface between candidates, questions and dictionaries" (p. 632).

They carried out two studies (or "experiments"). "In both cases subjects took a reading test on the final day of a four week professional EAP course at Warwick University. All the subjects were non-native speakers of English. Most were postgraduate students [...]." (p. 633)

In both studies, the students read two authentic texts (812 words in total) and answered 15 multiple-choice questions.

#### First study

Of 83 subjects, 40 had no access to dictionaries, while the others were allowed to use dictionaries (English MLDs or BDs). All the students – who were allotted one hour – took the test in the same room. Those who used dictionaries were requested to indicate the words they looked up.

Results:

- Fifteen of the 43 subjects who were allowed to consult dictionaries did not use them. Nineteen consulted an MLD, 9 a BD.
- There was no significant difference in the scores of four groups: students who had no access to dictionaries, those who could use dictionaries but did not, those who used MLDs and those who consulted BDs.
- On average, "high scorers" (13-15 correct answers) and "low scorers" (6-8 correct answers) used the dictionaries less than "intermediate scorers". However, the authors argue that, due to considerable variation between subjects, "generalisations seem unreliable" (p. 634).
- There was a significant relationship between time spent on the test and scores: the fastest obtained better scores.
- In the fast group, only 19% of the subjects used the dictionary; in the slow group, 64% did so; and in the intermediate group, 36%.

#### Second study

This time, 65 students were divided into two groups. One was allowed to use only an MLD, *viz.* the OALD (34 subjects), while the other was not allowed to consult any dictionary. In addition, the authors decided "to match the two groups according to language ability", "to conduct the test in separate rooms, so that both groups were unaware that the other group was taking the test under different conditions", and "to record accurately each subjects' completion time" (p. 635). "Prior to the test all 65 subjects were asked to underline on a wordlist those words which they were not familiar with. The wordlist

contained all lexical words in the text and question paper, with the exception of common words [...].” (p. 636)

Since 5 subjects in the first group preferred not to use a dictionary, the authors divided the students into three groups: those who used the dictionary (29 subjects), those who did not use the available dictionary (5), and those for whom no dictionary was available (31).

#### Results:

- There was no significant difference in mean scores among the three groups.
- Those for whom a dictionary was available (whether or not they used it) took significantly longer to finish the test than those of group 3. (The researchers find this result “puzzling”.)

Nesi & Meara point to certain differences between their own studies and those reported by Bensoussan, Sim & Weiss (1984), and argue: “If reading tests are designed to measure the learner’s ability to comprehend text, and if dictionaries are designed to aid reading comprehension, it is not unreasonable to assume that the test, the dictionary, or the user is failing in its purpose when dictionary use cannot improve reading test scores” (p. 638f.). Then they comment on the three factors (test, dictionaries, users).

#### **Hulstijn (1993)**

The author investigated look-ups of unknown words in a reading task. Since the subjects did not consult print dictionaries but rather electronic glosses, this study is summarized in 6.1.

#### **Knight (1994)**

Because the author dealt also, and even more, with vocabulary learning, her study is summarized in 4.4.

#### **Laufer & Melamed (1994)**

The title of the article indicates quite clearly what the study was about, but in the article itself the subjects’ L1 is not revealed. Only because two BDs are mentioned in which one language is Hebrew does it become clear that this was their L1.

The purpose of the study was to investigate the effectiveness of three types of dictionaries (BDs, MLDs and LDTs) in text reception, as well as in text production.

The production part will be summarized in 4.2.

As to text reception, it must be pointed out that although the study is described in this subchapter on reading comprehension, the subjects did not actually read a text, but only isolated words. The authors argue that “the presentation of unknown words should be done out of text context in order to eliminate a possible effect the context can have on comprehension” (p. 566).

The subjects were two groups of EFL learners. One group consisted of 76 11<sup>th</sup>-grade high school students, considered “pre-advanced”, and the other of 46 university students not majoring in English but classified as “advanced”.<sup>151</sup>

The researchers chose 15 low frequency words, probably unfamiliar to the students. A multiple-choice test was administered in which for each word there were three options: a correct L1 equivalent, an equivalent with an approximate meaning, and one completely incorrect.

Each subject received three sheets; each contained 5 of the 15 test items and the respective entries of one of the three dictionary types. “To avoid a situation where all students would have the same words explained by the same type of dictionary, each third of the tests had different 5 words explained by the same dictionary” (p. 568).

Results of this comprehension test:

- On average, the subjects obtained significantly better scores when using the LDT than with the other dictionaries. The difference between MLD and BD was not statistically significant.
- Differences between the two groups were not significant. However, in the first group (“pre-advanced”), the effectiveness of the LDT was greater than in the second group.

The authors wanted to find out whether reference skills had any influence on the results. In order to measure these skills, they summed up the scores obtained by each subject in the comprehension and the production test with each dictionary. The maximum score being 60, they divided the students into three groups: group 1 – less than 30 points; group 2 – 30-45; group 3 – more than 45. The three groups were made up of 23, 75 and 25 students, respectively.

Results of the comprehension test:

- For group 1 (“unskilled dictionary users”), the LDT was significantly better than the MLD; the BD was much better than the MLD, although the difference was not statistically significant.
- For group 2 (“average dictionary users”), the LDT was significantly better than the BD, and the MLD was somewhat better than the BD, although not significantly so.
- In group 3 (“good dictionary users”), there were no significant differences between the three dictionaries, but in general the MLD was the best and the BD the worst.

Laufer & Melamed conclude that “a good ‘bilingualised’ dictionary is suitable for all types of learners” (p. 575).

One of the problems with this study is that the task was very artificial; in normal reading comprehension the context is important. Also the “dictionaries” were not real dictionaries, but only entries. And one problem, which is common in empirical research, is the use of a multiple-choice test. Finally, Tono (2001: 23), asserting that Japanese BDs usually are more informative than the BD used in the test, argues that “the actual information provided by each type of dictionary must be carefully controlled in order to make the test more valid”. This means that one cannot generalize, saying that LDTs are more effective than the two other dictionary types.

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<sup>151</sup> In the abstract and on p. 567, the total number indicated is 123, but  $76 + 46 = 122$ .

### **Miller (1995)**

This is a master's dissertation in which the author examines the importance of context in L1 reading comprehension.

The subjects, 22 third-grade pupils in an elementary school (probably in the US), were divided into two groups. Miller wanted "to determine if there would be any significant difference between students instructed to use context clues and prior knowledge and those students not instructed in their use. It was hypothesized that students who only use a dictionary to understand words, not exploring context or prior knowledge, will not process a true understanding of the word meaning." All students were asked to use the formerly unknown words in sentences.

The results failed to confirm the hypothesis, since the mean scores in both groups were exactly the same.

Unfortunately the author does not reveal, among other details, how the students in the control group were restrained from using context or prior knowledge as well.

### **Laufer & Hadar (1997)**

This article reports the same study already described by Laufer & Melamed (1994). Certain authors (including Laufer & Levitzky-Aviad 2006) cite Laufer & Hadar, but not Laufer & Melamed.

### **Bogaards (1998)**

The author investigated the use of dictionaries in reading. Since he dealt with a special feature, namely access structure, the study is summarized in 5.1.2.

### **Coura Sobrinho (1998)**

In this study, a translation test was used to measure reading comprehension. The study is not described, either here or in 4.3, but rather in 5.2.2, because the subjects consulted one sole dictionary. Another part is summarized in 5.2.1.

### **Fraser, Carol (1999)**

Since this study deals more with vocabulary learning than with reading comprehension, it is described in 4.4.

### **Heijnen (2000)**

According to an abstract made available on the internet (<http://www.anela.nl/TTWiAbstracts63.html#heijnen>), the author wanted to find out

whether the use of dictionaries in final examinations in reading comprehension in English would be helpful for “MAVO” students.<sup>152</sup> The test results indicated that the consultations did not significantly influence the scores, i.e. did not improve reading comprehension. Heijnen believes that this is due to three factors: the students’ limited lexical knowledge, their lack of ability to infer and their lack of experience in dictionary use.

### **Liou (2000)**

In the January 2001 edition of the journal *Language Teaching (The international research resource for language professionals)*, as well as at <http://www.informaworld.com/smpp/content~content=a725289359&db=all>, this study is summarized as follows:

The paper discusses the findings of a study on using recorded on-line data to investigate EFL learners' strategies of word consultation in order to facilitate reading comprehension. The on-line logs were triangulated with off-line data which included the answers to reading comprehension and paraphrase questions, time on task, the selection of the word sense among its multiple definitions, and a questionnaire which surveys comparisons between the dictionary and other look-up facilities. It was found that learners with better language proficiency understood more, read faster, looked up fewer words and were able to disambiguate more polysemous words. Yet, advanced learners are found to ignore certain unknown words without looking them up while using more global strategies. Qualitative analyses showed certain effective reading and word consultation strategies. Suggestions are put forward to shed light on how to tap the power of dictionary use for reading comprehension.

### **Bogaards (2002)**

A “small-scale experiment” (p. 652) was carried out in order to examine the helpfulness of the German MLD *Wörterbuch Deutsch als Fremdsprache* (WDaF), published by de Gruyter in 2000. Since “it is difficult to interpret the results of such an experiment if there are no comparable data” (*ibid.*), the author decided to test also another MLD, which had been published in 1993, *viz.*, *Langenscheidts Grosswörterbuch Deutsch als Fremdsprache* (LGDaF).

He selected three short German texts of similar difficulty level. In each text, eight supposedly unknown words were underlined. The task was to translate these words into the L1. “Translations in the mother tongue were chosen as the most valid and precise indications for the understanding of the information found in the dictionaries” (p. 653).

The subjects were 27 Dutch high school students, aged between 16 and 18, who had been studying German for five years. “As Dutch is linguistically very close to German, they [could] be assumed to be advanced learners with a fairly high level of competence.” (p. 655)

Since he wanted the three texts to be read under different conditions, Bogaards prepared six versions of a booklet. On its first page, there was one text, a space to write

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<sup>152</sup> In the abstract, there is no mention of the country in which the study was carried out. However, the acronym MAVO (translated as “*lower secondary general education*”) is used in the Netherlands. It stands for “*Middelbaar algemeen voortgezet onderwijs*”. In this type of school, the students are aged between 12 and 16. I thank Prof. Dr. Philippe Humblé for the explanations.

down the Dutch translations (without the aid of a dictionary) and an “instruction about the procedure to follow for the two other texts”. On the second page, there were another text and copies of the entries (for the underlined words) taken from one of the two dictionaries. On the last page the students were asked to answer certain “identification questions” (about age etc.) and to express their opinions on the dictionaries.

“Not only perfect translations were accepted as good answers, but also translations that showed adequate comprehension but that were grammatically or stylistically less adapted to the context” (p. 656).

General results:

- Mean number of correctly translated words: without dictionary – 19%; with the help of the WDaF – 44.4%; using the LGDaF – 40.7%.

Dictionary use led to a “highly significant” improvement of scores, but Bogaards stresses the fact that “the overall percentage of acceptable translations [was] only slightly superior to 40%” (p. 656). He also thinks that the MLDs may have helped in an even smaller proportion, since in certain cases the correct answer may have been guessed “on the basis of the context”. The author argues that “certain definitions seem definitely too difficult”.

As in many other studies, translation was used to measure comprehension. This is problematic in investigations in which MDs – or MLDs – are consulted. Since the subjects had no access to BDs, they had to find the translation in their mind. It is quite possible that in certain cases they understood the meaning of the target word, but were not able to provide an equivalent.

## Wingate (2002)

This work is a doctoral thesis published in book form.<sup>153</sup>

The author wanted to investigate the effectiveness of several types of learners’ dictionaries (in fact, one MLD and one BD) in reading comprehension and vocabulary learning. The subjects were second year students of two quite similar undergraduate programmes at two universities in Hong Kong, where English was used as language of communication and where they were learning German at an intermediate level.

Since Wingate carried out several studies, with different methods and aims, they are summarized in various chapters: in 2.2, 5.1.2, and here.

In this subchapter, I deal with what the author calls the “first experiment” (p. 65ff.), which was, according to her, a partial replication of Knight’s (1994) study. The aim was to discover whether a German-English BD or a German MLD is more effective in reading comprehension and in incidental vocabulary acquisition, and whether the level of effectiveness is different for learners with different levels of “verbal ability”.

Forty-six students “were divided into high verbal ability and low verbal ability groups according to the mean score of their test results in the second semester of their second year”

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<sup>153</sup> The thesis, defended in Hong Kong in 2000, is cited by Thumb (2004: 17 f.). The book was reviewed by Paul Bogaards in the *International Journal of Lexicography* (16.2: 200-201), in 2003. The reviewer considers the thesis “written in the best traditions of German scholarship”, “presenting thorough discussions of all relevant concepts and giving clear motivations for all the choices that were made” (p. 200).

(p. 71). Of course, “verbal ability” here means “proficiency in German”. During the task, 12 of each group were allowed to consult the BD, and 11 the MLD; i.e., on the whole, 23 subjects used a BD, and 23 an MLD.

The subjects were asked to read two short authentic articles, “linguistically not too demanding” (p. 66), in which a total of 23 words were supposed to be unknown. In order to confirm this, a pre-test was administered in which the students had to mark the words they knew. “To ensure the validity of the subjects’ answers, the test contain[ed] a certain number of non-words.” (p. 68)

For the reading comprehension task, a computer program, especially developed for the experiment, was used. The texts were presented on the computer screen. When the students wanted to look up a word, they had only to click on it, and a window with the respective entry would pop up on the screen (but only in the case of the target words). The program recorded precisely “all look-up actions including those for non-target words” (p. 72). In the BD group, the entries were those of the *Langenscheidt New College German Dictionary German-English*, and in the MLD group those of the sole German MLD existing at that time, namely the *Langenscheidt Großwörterbuch Deutsch als Fremdsprache*. The entries looked exactly like the ones in the dictionaries.

The students did not give their answers on the computer, but on paper sheets.

Separately for each of the articles, the subjects were requested to: 1) read the text with the help of the “dictionary” and quit the computer program; and 2) write an “immediate recall protocol”, i.e. “write down everything they remember[ed]” (p. 69).

The second protocol was followed by two vocabulary tests related to the 23 target words: in the first one, the students were asked to supply equivalents or definitions in English or German; the second one was a multiple-choice test with five options per item: “one key, three distractors and the option ‘I don’t know’” (p. 69).

As to the concept of “vocabulary learning”, Wingate explains that “a target word was considered as learned when the meaning it carries in the reading context is understood”, and she recognizes that “the type of word learning which was assessed in this study is not only limited to one aspect of word knowledge [...], but also to short-term knowledge” (p. 73).

The first vocabulary test (TV1) “was scored by two independent judges”. Only the word meaning was taken into account; the answers were considered “correct” or “incorrect”. Since both tests “served as measures for the effectiveness of the two dictionary types, of the correct answers only those words were counted as ‘learned’ which [had] been looked up by the subjects” (p. 74).

#### Results:

- Reading comprehension
  - All students with high proficiency in German obtained much higher scores (28.68) than the others (19.36).
  - The group that used the BD obtained slightly higher scores than the MLD group, but the difference was not statistically significant. However, in the low proficiency group, the significance level, according to the Kruskal-Wallis test, “was just missed with a probability value of  $p=.55$ ” (p. 105).
- Vocabulary tests
  - In both tests, all high proficiency students obtained better scores than the others; in the first test, the differences were much larger than in the second one.

- In both tests, the BD group performed better than the MLD group, but only in the first test and in the high proficiency group was the difference significant.

Wingate compares the results with those of Knight's study (p. 105ff.); and, in order to triangulate the results of the investigation described above, carried out a "small-scale think-aloud study" (p. 76ff.), in which only 4 subjects participated. I cannot go into details in this regard.

Since the researcher noticed that, in the case of the MLD, look-up difficulties were caused by the definitions, she conducted two more studies, which, because they deal specifically with definitions, are summarized in 5.1.2.

Her questionnaire survey is described in 2.2.

### **Hayati & Mohammadi (2005)**

The main part of their abstract reads as follows:

The purpose of this study was to investigate the impact of bilingual dictionary compared with monolingual on reading comprehension of [Iranian] intermediate EFL students. The participants in the experiment were forty-five intermediate EFL students studying at Shahid Chamran University of Ahwaz [Iran]. They had been screened out from a larger population by means of a proficiency test. They were then divided into three equal groups: bilingual group (BG), monolingual group (MG), and control group (CG), and took the same reading comprehension test but each group used a different strategy. That is, BG used only bilingual dictionary, MG used only monolingual dictionary and CG could take advantage of guessing ability and contextual cues no reference to any kind of dictionary. The results of this study indicated that BG scored the highest ( $M=16.86$ ), followed by MG ( $M=16.26$ ) with CG doing the lowest ( $M=14.73$ ).

### **Zucchi (2010)**

The study reported in this doctoral thesis is not only the sole investigation into the effects of dictionary use on written comprehension of Italian, but also one of the very few empirical studies of Italian dictionaries in general (as can be seen in the synoptic tables). Since subjects consulted EDs, this piece of research is summarized in 6.2.

## **4.2 Writing**

Only the following few studies deal with dictionary use in composition writing or in the writing of other texts (e.g. letters): Ard (1982), Neubauer (1985), Al-Khawaldeh (1994), Yokoyama (1994), Christianson (1997), Harvey & Yuill (1997), Momoi (1998), Winkler (2001, 2001a), Nuccorini (2002), Chun (2004), East (2005), Gomes (2006), and Durão & Zacarias (2007). Of course, in the questionnaire surveys, certain informants did mention the

writing of texts as one circumstance in which they use dictionaries. For instance, in Diab (1990) the writing of “research essays” was mentioned.

However, in the few investigations in which the *effects* of dictionary use on writing was examined, the subjects mostly had to write only isolated sentences.<sup>154</sup> Of these studies, the one by Laufer & Melamed (1994) is summarized here. In 5.1.2 are to be found the descriptions of Miller & Gildea (1984) and of McKeown (1991) (on L1 writing), as well as of Summers (1988); Laufer (1992); Laufer (1993); Cumming, Cropp & Sussex (1994); Nesi (1994); Nesi & Meara (1994); Nesi (1996); and Nesi (1998), all on FL writing. In some of these investigations, sentence writing was only one of the circumstances of dictionary use.

### **Laufer & Melamed (1994)**

This study was described in 4.1. Here I present the results of the writing test, in which the subjects had to write sentences with the words that had been looked up in three types of dictionaries (BD, MLD, LDT). The critical remarks on this investigation are valid here as well.

- Practically no difference was found between the BD and the LDT. Both were significantly better than the MLD.
- There was no difference between “pre-advanced” and “advanced” learners of English.
- Differences according to reference skills:  
For “unskilled dictionary users”, the BD was better than the LDT and significantly better than the MLD. For “average dictionary users”, the LDT was slightly more effective than the BD and significantly better than the MLD. For “good dictionary users”, the LDT and the MLD were slightly (but not significantly) more effective than the BD.

### **Laufer & Hadar (1997)**

As was said in 4.1, this article reports the same study already described by Laufer & Melamed (1994).

### **East (2005)**

The following abstract is available at <http://www.openthesis.org/documents/Tests-L2-writing-proficiency-contribution-552135.html>:

[...] This study investigated tests of writing proficiency in German at the intermediate level where a performance variable was the availability or non-availability of a one-volume bilingual

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<sup>154</sup> Ard (1982), mentioned in the first paragraph of this chapter, studied the effects of dictionary use, but there were only two subjects, with different native languages, and only one used a dictionary. This part of his investigation was described in 3.2. As was said there, the researcher concluded that “it is impossible to say that the use of a bilingual dictionary had any major effect on the quality of [the] composition or upon [the] composing process”. The only other study (on the effects of dictionary use) in which compositions were written is East (2005).

dictionary. Three studies were carried out. The first two focused on a small number of participants ( $n=6$  and  $n=5$ ) studying German in a New Zealand tertiary institution. The third involved students ( $n=47$ ) preparing for the intermediate-level Bursary examination in German, a high-stakes examination for 17-18 year-olds in New Zealand. Participants' writing products were analysed quantitatively in terms of scores, lexical richness, type of dictionary look-up and success with look-ups. A qualitative analysis of products investigated quality of language across the two conditions. In the first two studies, frequency and duration of dictionary use was investigated through observation. All participants were given questionnaires, and certain were interviewed. This information was used to determine the range of strategies participants employed, and their perceptions of dictionary availability in tests of writing proficiency. Results revealed that dictionary availability made no statistically significant difference to test scores at the target level. There was, however, certain improvement in lexical sophistication. On the other hand, there were also often errors with look-ups, and writing quality when writing without the dictionary was also enhanced by previously learnt phrases. Participants generally felt more confident when they had the dictionary, particularly those with greater prior experience with using dictionaries. Similarly, those with less prior experience tended to prefer the test without the dictionary. The most frequently expressed drawback to having the dictionary was its negative impact on time. On average participants used the dictionary for around 20% of the available time, making around 9 look-ups. The results suggest that use of dictionaries in tests requires a careful weighing of benefits and drawbacks.

The same study is reported in East's (2008) book, which was reviewed by Robert Lew in the *International Journal of Lexicography* (2009, vol. 22.3, p. 344-348). Lew mentions certain results of the questionnaires and the fact that, according to the results of the writing assignment, "dictionary use does *not* appear to affect error rate". Since look-up success largely depends on the quality of the dictionaries, Lew regrets that "the issue of what features of dictionaries can support production is largely ignored in East's book".

### McCreary (2008)

The abstract of this study is available at [http://www.iula.upf.edu/agenda/euralex\\_08/euralex0202fr.htm#s7](http://www.iula.upf.edu/agenda/euralex_08/euralex0202fr.htm#s7):

We test this hypothesis: The *New Oxford American Dictionary* (NOAD), MW, AHD, and MEDAL equally meet the needs of American college students when they look up a *hard word*. On a production task, writing the word in an appropriate sentence, NOAD users scored much higher than the other three groups on every *hard word*, with only one exception per user. The *Macmillan English Dictionary for Advanced Learners* (MEDAL) users scored higher than the users of the *Merriam Webster's Collegiate Dictionary*, 11th Edition (MW) or users of the *American Heritage Dictionary*, 2nd Edition (AHD), another collegiate desk dictionary. NOAD has several advantages over the other collegiate dictionaries, including microstructure and vocabulary coverage. Unfortunately, overall coverage of *hard words* is problematic in MEDAL, since it is intended for non-natives. MW users were hampered by their tendency to choose the first sense in the entry, which is the oldest historical sense in MW. This also applies to AHD. This suggests that American college students might consider buying NOAD for its usability and its vocabulary coverage.

## 4.3 Translation

Does any professional or lay translator or any FL learner who is doing a translation work without a dictionary? In translation courses, the students are informed about the tools at their disposal, and, although new tools (e.g. parallel texts, data banks, internet search machines) are being used more and more, dictionaries (electronic as well as paper dictionaries) remain important resources.

MDs are consulted by people who translate, and may even be essential for obtaining detailed information about the looked up items; but the dictionary type most used in translation is the BD (general or specialized). certain authors even call the BD a “translation dictionary” (e.g. Al-Kasimi 1983).

To my knowledge, there are three compilations that deal specifically with the relationship between translation and dictionaries, namely *Lexicography and Translation* (Louw 1985), *Translation and Lexicography* (Snell-Hornby & Pöhl 1989), and *Translation and Bilingual Dictionaries* (Sin-wai 2004). Likewise, the titles of certain monographs refer to the topic of translation and dictionaries, for example, *A Critical Study of Bilingual Dictionaries from the Point of View of Their Usefulness to Translators* (Hafiz 1995) and *Legal Translation and the Dictionary* (Chromá 2004). Nevertheless, Hartmann (2004: 12f.), after citing certain articles, complains that “efforts of this kind have remained a minority pursuit and have not yet had the desired effect on the bulk of theoreticians and practitioners of either lexicography or translation”; he remarks that none of the more than 300 articles in the *Dictionary of Translation Studies* (Shuttleworth & Cowie 1997) is devoted to dictionaries. On the other hand, he refers to the “interesting survey [...] of dictionary-making within the history of translation” by Van Hoof (1995).

Although Hartmann (2004: 8ff.), presenting data from congresses, journals and books on lexicography, deplores “the neglect of interlingual issues in lexicography”, there is a voluminous bibliography on BDs. Topics dealt with are, for example, types of equivalence, dictionary equivalents, the differences between these and the equivalents that translators need, and, above all, the deficiencies of BDs.

For FL learners and lay or beginning translators, it might be well to quote two assertions: “It is the task of the translator not to hunt [in the BD] for the insertable item, but to use the given information as an aid in his all-important decision-process in recreating the text” (Snell-Hornby 1990: 224); “Lexicography doesn’t provide translation. It provides assistance to the person carrying out the translation” (Tarp 2004: 31).

Since there is a great difference between FL learners and translators, I have subdivided this chapter. However, as will be seen in 4.3.2, there is apparently no study on the effects of dictionary use during translations done by professional translators; the subjects of the few investigations mentioned in 4.3.2 were translation students, sometimes called “trainee translators”. Only Nord (2002) has examined the extent to which dictionary consultations by professional translators are successful (cf. chapter 3).

The titles of certain works on the relationship between dictionaries and translators suggest that the authors carried out empirical studies of dictionary use, whereas in reality they only express opinions (which, of course, may be based on empirical studies reported by the same or by other researchers): Roberts (1992), Roberts (1997), Rogers & Ahmad (1998), Fraser [Janet] (1999), Roberts & Martin-Rutledge (1999).

Professional translators comprised some or all of the participants in the questionnaire surveys reported by Tomaszczyk (1979) and Varantola (1992) (cf. 2.2), and in the following studies on actual dictionary use (cf. chapter 3): Fraser [J.] (1994), Duvå & Laursen (1994), Jääskeläinen (1996), Jensen (1999), Nord (2002), and Ronowicz, et al. (2005).

### **4.3.1 The effects of dictionary use during translations done by FL learners**

This is not the place to discuss whether FL learners should do translations. Suffice it to say that in many countries translations are part of FL teaching and learning, and often there are translation tasks in examinations.

Considering that translation is not the main theme of this book, I have included in this subchapter studies in which the subjects translated not texts, but rather isolated sentences. In several investigations, this was simply the method of measuring the effects of dictionary use in certain other circumstance (e.g. reading).

Translations of texts occurred in the following studies: Hatherall (1984), Tono (1984), Wiegand (1985), Krings (1986), Müllrich (1990), Al-Besbasi (1991), Bogaards (1991), Tono (1991), Nuccorini (1994), Atkins & Varantola (1997), Bogaards (1998a), Coura Sobrinho (1998), Jensen (1999), Lew (2002, 2004), Livbjerg & Mees (2003), Babenko & Troschina (2004), Teixeira (2005).

Some kind of translation was done by FL learners in several of the investigations on actual dictionary use summarized in 3.2: Hatherall (1984), Tono (1984), Lantolf, Labarca & den Tuinder (1985), Wiegand (1985), Krings (1986), Müllrich (1990), Al-Besbasi (1991), Tono (1991), Nuccorini (1994), Atkins & Varantola (1997), Teixeira (2005).<sup>155</sup> Summaries on other such studies are to be found in chapter 5: Laufer (1992), Tono (1992), Bogaards (1994, 1998, 1998a), Coura Sobrinho (1998), Bogaards & Van der Kloot (2001), and Babenko & Troschina (2004).

#### **Bogaards (1991)**

After certain comments on learners' (or "pedagogical") dictionaries, i.e. MLDs, the author reports on three studies.

The first was a questionnaire survey among 69 Dutch first-year university students who had been studying French for six years. Bogaards does not reveal the results, but asserts that the findings, along with the students' language proficiency, were taken into account in the two other studies.

The third investigation, on vocabulary learning, is described in 4.4.

Here is the summary of the second study:

Since the author wanted to investigate mainly the effectiveness of the French MLD *Dictionnaire de Français Langue Étrangère* (DFLE), he chose as task an L1-L2 translation,

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<sup>155</sup> L1-L2 translation was one of the tasks in the study reported by Atkins & Varantola (1998), described in 3.2.

because this dictionary is more appropriate for text production than for reading (and, one may add, because translation is easier to evaluate than composition).

On the base of the survey data, 44 of the 69 Dutch students were divided into four groups, of similar language proficiency. Three of them were allowed to consult a BD, the DFLE or the *Petit Robert*, respectively, (an MD or MLD), while the fourth one had to translate without the help of any dictionary.

The text to translate – which consisted of about 150 words – contained 17 words or expressions that supposedly had to be looked up. All of them existed in the three dictionaries.

The subjects were asked to underline all items looked up.

In the following table are displayed the percentages of correct and incorrect translation of the 17 supposedly unknown lexical items, translated with or without the aid of dictionaries, and the totals. In groups 1-3, “without dictionary” means that the subjects, although having a dictionary at their disposal, in some cases did not consult it.

	with dictionary		without dictionary		totals	
	correct	wrong	correct	wrong	correct	wrong
Group 1 (BD)	60.3%	10.3%	19.1%	7.8%	79.4%	18.1%
Group 2 (DFLE)	21.2%	23.5%	23.5%	31.2%	44.7%	54.7%
Group 3 ( <i>Petit Robert</i> )	14.2%	20.6%	32.5%	32.5%	47.0%	53.1%
Group 4 (without dict.)	32.9%	66.5%	32.9%	66.5%	32.9%	66.5%

- As was to be expected, the use of a dictionary (any of the three) was advantageous. Group 4 made the most mistakes (66.5%).
- The BD was much more helpful than the MDs.
- The DFLE users translated more items, both correctly and incorrectly, than those who consulted the *Petit Robert*.

Bogaards remarks that “often it is impossible to find in an MD a word which one does not know” (p. 100), and that unknown words which can be found in an MD “are those that belong to lexical fields, provided that the dictionary presents them in this way” (p. 104).

As to the DFLE, it did, in certain cases, help more than the *Petit Robert*; however, considering the overall findings, it cannot be stated which of the two MDs (or MLDs) is more helpful in L1-L2 translation (or, more exactly, in the translation of certain lexical items).

Please see the third study in 4.4.

### Coura Sobrinho (1998)

The author employed a translation to measure the effects of dictionary use in reading comprehension. Since the subjects consulted only one dictionary, the report is summarized in 5.2.2.

### Li (1998)

[Dolezal & McCreary (1999: 73); Thumb (2004: 7)]

A translation test was made in one part of the study, but neither Dolezal & McCreary nor Thumb provide any details. For a brief summary of the questionnaire survey, please see Li (1998) in 2.2.

### **Lew (2002)**

In this article, already mentioned in 2.2, the author provides certain information on the study, which is reported in great detail in his book published in 2004. Please see Lew (2004), below.

### **Raudaskoski (2002)**

[Lew (2004: 30)]

Lew provides the following information on this study:

Raudaskoski (2002) asked twenty Finnish senior secondary school students to complete translation assignments, eight from English into Finnish and eight from Finnish into English, first without the aid of the dictionary, and then with the use of one of two different dictionaries: a large general bilingual dictionary and a much smaller bilingualized dictionary. Raudaskoski reports that the performance of the bilingualized dictionary users improved more between the two rounds of translation than did that of the bilingual dictionary users, but he also warns that the sample was small and “it is impossible to make any universal statements” (Raudaskoski 2002: 3). Unfortunately, the degree or difference in improvement between the two groups is not reported, and no attempt at statistical evaluation is claimed, which is understandable in view of the small sample size. Raudaskoski also reports that both dictionaries helped the English-Finnish translation better than the Finnish-English translation. Somewhat surprisingly, working without the dictionaries, subjects did better on translation into English, their L2, than into Finnish, their L1. The two dictionaries used in the test clearly differed not only in terms of type and size, but also in terms of lexicographic presentation: “[t]he bilingual dictionary, with its dense entries full of symbols and abbreviations, caused difficulties for many students, especially when the necessary headword or equivalent was concealed inside a long entry” (Raudaskoski 2002: 3), so again, the findings cannot be generalized to dictionary types.

### **Livbjerg & Mees (2003)**

The major part of this study, in which the TAP method was employed, deals with actual dictionary use. Please see the description in 3.2.

10 Danish postgraduate students translated a text from their L1 into English. Five of them translated it using dictionaries (a BD and an English MD), and the other 5 first without dictionary and then with the help of the two dictionaries.

The fifteen translated texts (5 from group 1 and 10 from group 2) were evaluated by three translation teachers who did not know in which way they had been produced.

Results concerning the influence of dictionary use (p. 130):

- Of a total of 115 searches, the students themselves believed that only 66 were helpful. Forty of these 66 did not really improve the translations, since in 29 cases a satisfactory solution had been found before the consultations, and in 11 cases errors were maintained or substituted by other

errors. Thus there were 26 searches (i.e. 66 minus 40) which either improved or worsened the translations. Of these, 5 worsened them. Nine of the remaining 21 cases of improvements were “simple spelling corrections [which] could have been dealt with by a spell checker”. Of the “mere twelve quality-improving instances”, the dictionaries could not have helped because they did not contain the respective information.

The authors conclude that “there are at best seven genuine quality-improving consultations. Set against the background of 115 units involving dictionary consultations and 241 verbalised units in all, the results can justifiably be considered thought-provoking”; and they maintain the following: “Students have insufficient confidence in their own linguistic abilities. They therefore overuse dictionaries for non-domain-specific translation tasks looking up units for which they have already found one or more adequate solutions without consulting them [...].” (p. 131)

Of course these results, involving only 10 FL learners (considered very proficient in English and accustomed to L1-L2 translations), cannot be generalized.

### **Lew (2004)**

A preliminary report on this investigation was presented in Lew (2002). In subchapter 2.2, I provided the following general information:

The subjects were 712 Polish learners of English from several regions and social groups. They were studying in 44 classes of 20 Polish educational institutions and had several proficiency levels. The study consisted of a questionnaire survey, a controlled experiment and a questionnaire filled in by the students’ teachers.

Here, the experiment, called the Dictionary Effectiveness Test, is described. Although subjects had to carry out four different tasks, I have dealt with the study in this subchapter because two of the tasks involved translation.

In all subject groups, the Dictionary effectiveness Test was administered during the same session as the Learners' Questionnaire, directly following the questionnaire at the prompt of the experimenter. The test involved a number of test tasks completed with the help of specially prepared dictionary pages included in the test booklet and presented on the page directly facing the test items. There were six different versions of the dictionary, assigned randomly to subjects. (p. 74)

The test tasks varied in the amount of textual context accompanying the target lexical items. There was a grading of contextual material from none (isolated lexical items), through sentence-long, up to a short text of several sentences (p. 75).

Lew provides the following information on the tasks:

[One part of the test] involved the semantic matching of a target (pseudo-English) lexical item with a Polish lexical item closest in meaning, that is picking an equivalent, with one best answer and three distractors.

The second part [...] involved semantic matching of a target (pseudo-English) lexical item with an English item and thus resembled synonym matching.

[Another section] was a sentence completion exercise, with an empty slot to be filled with one item out of a list of four items provided: one correct item and three distractors, each being pseudo-English words provided in the test dictionary.

[The last part] was based on English-to-Polish translation, with English and pseudo-English target words (again provided in the test dictionary) featuring in each sentence to be translated (*ibid.*).

As to the dictionaries:

six versions of the dictionary were prepared [...], all set in identical font and paragraph styles, and with identical structure, differing only in the type of semantic explanation provided for the senses. The semantic explanation in the six versions was as follows: 1. Polish equivalents; 2. definitions in English; 3. Polish equivalents followed by definitions in English; 4. Polish equivalents followed by definitions in Polish; 5. definitions in English followed by Polish equivalents; 6. definitions in Polish followed by Polish equivalents (p. 76).

An enormous amount of data is shown in many tables and figures and analysed statistically. The main results are summarized in a “review of the findings”:

The Dictionary effectiveness Test, the core part of this study, has provided a number of insights into the effectiveness of dictionary versions offering different types of semantic explanation. Looking at learners of different levels, we find a consistent pattern of lexical task scores increasing with level. [...] More interestingly, the monolingual version 2 [...] was consistently the least effective of all – for words in isolation, in sentence-length context, and in text context alike. The absence of a Polish equivalent had a strongly negative effects on scores. It was the lower-level learners that the monolingual dictionary placed at the greatest disadvantage: as learners' skills progress, their reliance on Polish equivalents should become less essential. The negative effects of the missing Polish equivalent did however persist all the way to the highly advanced learners at level 5. Adding a definition in front of a Polish equivalent had a depressing effect on scores of lower-level subjects in sentence and text contexts. This negative effect was observed for definitions in English and in Polish alike. English definitions fared somewhat better than Polish definitions here, although they certainly did not help, as advocates of the semi-bilingual dictionary type might hope. My best interpretation of the data is that those entries which combined two ways of meaning provision turned out to be too crowded and thus confusing to learners at the lower levels, when compared with the simpler bilingual entry. The fact that adding an English definition in front of the Polish equivalent lowered the effectiveness scores to a lesser extent than adding a Polish definition in the same position can be explained in terms of the English definition obscuring the Polish equivalent less than a Polish definition does, and especially so for Polish speakers. Further support for this interpretation comes from the results of the two configurations with definitions following the Polish equivalent, which produced better scores, as the equivalent was immediately available, and the following material could be easily ignored. For words in isolation, when a definition was presented along with a Polish equivalent, Polish-language definition worked better than English definition, although this difference vanished at level 5. An analysis of individual test items reveals evidence of a mechanical matching strategy of similar lexical items between source context and dictionary definition. This behaviour is similar to the *kidrule* strategy noted in the literature, and was here found to be particularly typical of the beginner-level users (p. 177).<sup>156</sup>

### Laufer & Levitzky-Aviad (2006)

Arguing that traditional BDs as well as LDTs are inadequate for production in FL, the authors remind that Laufer (1995) had suggested a new type of BD and assert that lately “several bilingual dictionaries for production have seen light”. They call the one proposed

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<sup>156</sup> The “*kidrule* strategy” is explained in chapter 3 in Miller & Gildea (1984).

by Laufer "Bilingual Dictionary Plus" (BD+). It should contain "four elements: 1. L1-L2 translations; 2. L2 information (definitions, examples, etc.) about each translation option; 3. Thesaurus-like information, i.e. semantically related words to each translation option; 4. additional L1 meanings of the L2 translations". The authors claim that in the electronic format such type "became easy to construct and simple to use".

In order to investigate such a BD+, Laufer & Levitzky-Aviad designed a mini dictionary (with the characteristics mentioned above) consisting of 44 entries. In 36 of them, the lemma was one of the target words of the test to be administered, while the other 8 entries were only distractors. This mini dictionary was produced as well on paper as in electronic format. The authors call it also "Hebrew-English-English" dictionary.

The subjects were 75 learners of English with native or near native competence in Hebrew. They represented four English proficiency levels: 16 were majoring in English; 19 were non-English majors, but exempted from EFL courses; 17 "were not good enough for exemption"; and 23 were 11th grade high school students. All of them were "familiar with the computer environment".

In a pilot study, twelve other students (three from each level) had to translate 48 sentences, each containing a supposedly unknown word, from Hebrew into English. For the main study, only 36 words were chosen as target words. Twelve of them were "simple" (i.e. there was a one-to-one correspondence of meaning with their English equivalents), and twenty four were "complex" (i.e., the word had several meaning equivalents and/or the preposition used with it was different in English).

The task was the L1-L2 translation of 36 isolated sentences with the help of one of four dictionaries: an English-Hebrew LDT, a Hebrew-English BD, the BD+ on paper (P-BD+), and the computerized BD+ (C-BD+).

Each student received four worksheets. Each worksheet contained 9 Hebrew sentences (out of the total of 36), in which the target words were underlined. "The order of the worksheets, as well the dictionary required for each worksheet changed from one participant to another." Thus, "all participants used all four dictionaries, and each target word was translated with the help of the four dictionaries though by different students".

The look-ups in the electronic BD+ (P-BD+) were recorded on log files.

After the task, the students were asked their opinion about the dictionaries.

In the evaluation of the test, only the translation of the target words was taken into account. Each word translation could receive a score of 0, 0.5 or (when the translation was completely correct) 1.

Results concerning students' opinions and actual dictionary use:

- Students' opinions:  
The subjects preferred the dictionaries in the following (decreasing) order: C-BD+, P-BD+, BD, LDT. The differences between all of the dictionaries were statistically significant.
- Participants' look-up preferences of dictionary information in the C-BD+ (as recorded on the log files): there were eight major look-up patterns regarding the information sought in the entries, the two most frequent being: 1) equivalent + definition + examples (69.3%); 2) equivalent only (66.7%).<sup>157</sup>

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<sup>157</sup> There must be something wrong with the percentages, because their sum should not be greater than 100. For example, if in 66.7% of look-ups only the equivalent was sought, then only in 33.3% the equivalent + certain other information could have been looked up.

Results concerning the effects of dictionary use:

- [...] the mean scores of all the responses obtained with the use of the P-BD+ or with the C-BD+ were significantly higher than those obtained with the use of the [LDT] and the BD, although not different from each other. The mean scores obtained with the use of the BD were significantly higher than those obtained with the [LDT].
- With one of the two versions of the BD+, the students correctly translated an average of 80% of the 36 target words (98% of the “simple” words and 70% of the “complex” words).

### **4.3.2 The effects of dictionary use during translations done by translators or “trainee translators”**

As was said at the beginning of 4.3, in the few studies on the effects of dictionary use the subjects were not professional translators but rather translation majors. Some authors call such students “trainee translators”.

Trainee translators were the informants in several questionnaire surveys described in 2.2: Corpas Pastor, Leiva Rojo & Varella Salinas (2001); Sánchez Ramos (2004a); Muráth (2005); Oliveira & Welker (2007). In addition, they were the subjects in the following studies on actual dictionary use (summarized in chapter 3): Starren & Thelen (1990), Jääskeläinen (1996), Atkins & Varantola (1997), Mackintosh (1998), Varantola (1998), Jensen (1999), and Ronowicz et al. (2005). Finally, they participated in a study on the effects of the teaching of dictionary use, described in chapter 7 (Sánchez Ramos 2004).

#### **Martin-Rutledge (1997, 1998)**

In this study, reported briefly in 1997 and in detail in 1998, 90 trainee translators were asked to translate 29 lexical items that were missing in the English translation of a French text. The author herself considers the task a “kind of bilingual cloze test” (Martin-Rutledge 1998: 46).

Since she investigated the effects of a specific entry component, *viz.* examples, her study is described in 5.1.2.

#### **Mackintosh (1998)**

This study is described in chapter 3 and in 5.1.2.

#### **Nord (2002)**

This study is described in chapter 3.

### Livbjerg & Mees (2003)

Although the subjects of this study were very proficient in the FL and were accustomed to doing L1-L2 translations, they were neither translators nor trainee translators. Therefore, the authors' report is summarized in 4.3.1.

## 4.4 The effects of dictionary use on vocabulary learning

As was said in the subchapter on reading comprehension (4.1), vocabulary is extremely important in language learning. It is essential for communication.

Usually two ways of vocabulary learning are distinguished: intentional and incidental.

In the past, learning was mostly intentional; i.e., the students had to learn new words by heart (and make vocabulary lists or keep vocabulary notebooks). Later on, and still today, textbooks have included vocabulary exercises. Doing such exercises is also intentional learning.

As to lexicography, Hausmann (1974: 99) argued that among dictionary types it is the "learning dictionary" which may help in vocabulary learning. Hausmann (1977: 144f.) distinguished "primary learning dictionaries" from "secondary learning dictionaries". The former are ordered onomasiologically (or thematically), and are therefore said to be especially useful for vocabulary learning. The latter are alphabetical dictionaries, in the entries of which certain features (e.g. word families and paradigmatic relations) facilitate vocabulary learning. The idea was that learners might study a new entry daily or weekly, in order to learn the words belonging to one specific semantic field.

This is not this kind of dictionary consultation which was done in the studies summarized in this subchapter. The aim of the investigations described here was to examine how sporadic look-ups (i.e., not systematic learning with the dictionary) influence vocabulary learning. Such look-ups occurred only in the incidental way of learning, namely as students performed some task (the aim of which was not vocabulary learning, but rather, for example, reading or translation), during which they incidentally learned certain words.

There is a voluminous bibliography on vocabulary learning. Not only are intentional and incidental learning distinguished, but also the concept of *vocabulary learning* is defined; or, more precisely, what it means to know a word is explained. Most authors agree that to know a word is more than just to know its meaning: if one wants to *use* it, one must know *how* to use it.<sup>158</sup>

As will be seen in this subchapter, in the few studies on the effects of dictionary use on vocabulary learning, in general only the retention of words for a relatively short period and in context was investigated – which is, of course, different from learning a word in such a way as to be able to use it later on in other contexts.

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<sup>158</sup> See for example Tono's (2001: 15 ff.) subchapter entitled "Dimensions of vocabulary learning".

Of the authors cited in this subchapter, only Miller & Gildea (1984, 1987), Eeds & Cockrum (1985) and Nist & Olejnik (1985) deal with L1 vocabulary learning.<sup>159</sup>

There are two studies which are cited in certain works on dictionary use, although the subjects consulted neither dictionaries nor dictionary entries, but rather word lists: Seibert (1930), cited by Krantz (1991: 16) and Ronald (2003: 289 ff.), and Oskarsson (1975), cited by Krantz (1991: 16) and Lew (2004: 48).<sup>160</sup>

### **Bialystok (1983)<sup>161</sup>**

[Hulstijn & Atkins (1998: 9)]

In their classification of studies of dictionary use, Hulstijn & Atkins include Bialystok (1983) among investigations into dictionary use in vocabulary learning, asserting that the “variable being evaluated here is the retention by the dictionary user of facts about new expressions: their meaning, their syntactic properties, etc.”. Unfortunately, they do not provide any other information on that study.

### **Miller & Gildea (1984)**

This article is often cited in papers on the use of dictionaries in vocabulary learning. The authors carried out two studies. One, on actual dictionary use, is summarized in chapter 3, while the other, dealing with the influence of dictionary definitions, is described in 5.1.2.

### **Eeds & Cockrum (1985)**

The authors compared “the effectiveness of three methods of teaching word meaning” in L1. These methods are described as follows: In “Teacher Interaction”, students were helped to “expand an already existing conceptual network” (group 1, G1); the second method (dictionary use) “had students pair the words to be learned with dictionary

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<sup>159</sup> Tono (2001: 19) and Nist & Olejnik (1995: 176) cite Schatz & Baldwin (1986) among such studies. However, these authors did not deal with dictionary use, but rather investigated the influence of context. Only in their conclusion, in which they assert that, in general, “context clues do not reveal the meanings of low-frequency words in naturally occurring prose”, do they mention dictionaries, asking “Could students be made aware of the importance of using the dictionary and/or glossary as a first step in the determination of word meaning early in the upper elementary grades?” (p. 451)

<sup>160</sup> Ronald, who summarized and commented on Seibert (1930) quite extensively, opines that the “provision of word meanings through paired English and French words is basically the same as that found in bilingual dictionaries” (p. 291). Krantz states that in Seibert’s studies “learning words from context was compared with the learning of the identical words by means of bilingual word-lists. [...] Those who had learned the words from bilingual word-lists were found to be more successful.” As to Oskarsson (1975), two groups of students “used a bilingual word-list and a monolingual list, alternately” (Krantz). Lew uses the term “glossary” instead of “word-list”: “Bilingual glossaries were found to aid vocabulary learning to a significantly greater degree than monolingual glossaries.”

<sup>161</sup> Bibliographical data according to Hulstijn & Atkins: Bialystok, E. (1983). Inferencing: Testing the “Hypothesis-Testing” hypothesis. In: H. W. Seliger & M. H. Long (eds.), *Classroom oriented research in second language acquisition*. Rowley, Mass: Newbury House, 104-123.

definitions” (G2); and the third (G3) “had students read the words in a meaningful context of a junior novel” (p. 492).<sup>162</sup>

As a matter of fact, all students read that novel, an “amusing, exciting book” which contained many supposedly unknown words.

The subjects were 88 fifth-graders at an American school. Through a multiple-choice test – which tested how many of 85 target words taken from the novel were known – they were divided into “low and high achievers of word meaning”. These were then randomly assigned to three treatment groups. “For the 10 days of the experiment students went to the classroom assigned to their treatment group for 1 hour of instruction. Each day [three] teachers rotated the presentations to each group to control for differential effects caused by teacher enthusiasm for or ability in teaching one method or another” (p. 494).

During the reading, 40 new words were introduced. At the end of the ten school days, “all three groups took a multiple choice posttest over the 40 words”. “The same test was given again 3 weeks later [...] to check for retention” (p. 495).

#### Results:

- On the post-test, G1 obtained the best results, followed by G2. The differences were statistically significant.
- On the retention test, G1 again scored significantly better than the other groups, but the difference between G2 and G3 was not significant anymore.
- On the post-test, the “low achievers of word meaning” (i.e. those with low lexical knowledge) of G1 obtained better scores than the “high achievers” of the other groups.

The authors, who are aware of the “difficulty of classroom related research” (p. 496), conclude that “more new words will be learned and remembered if teachers add direct instruction in word meaning to their reading programs” (p. 497). They characterize the “dictionary method” as “a tedious assignment to look up and copy pages of definitions” (*ibid.*).

### **Miller & Gildea (1987)**

Please see chapter 3.

### **Summers (1988)**

According to Tono (2001: 21), this “was one of the earliest works in which the effects of dictionary use on vocabulary learning were empirically tested”. As in most other studies described in this subchapter 4.4, only word retention was examined. Since Summers investigated the influence of a specific dictionary feature, *viz.*, definitions, her report is summarized in 5.1.2.

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<sup>162</sup> Of dictionary elements, only definitions were mentioned. Nevertheless this study was not included in subchapter 5.1, because definitions were not the object of the investigation.

### Bogaards (1991)

The author carried out a study on the effects of the use of BDs and MDs. Please see a general description in 4.3.1.

Bogaards administered two tests. By means of the second one, he investigated word retention, which he, like many others, calls “vocabulary learning” (p. 101, 104).

Five groups of Danish students were asked to translate 17 lexical items from their L1 into English without the help of dictionaries. Four of these groups had seen the items in a text that had been translated two weeks earlier, with or without consultations in several dictionaries (cf. 4.3.1). For the fifth group, the 17 words and expressions were supposedly new. Thus, only in the case of the first four groups was word retention verified.

Results:

Groups (in brackets, the dictionaries that were used in the translation two weeks earlier)	Correct translation
Group 1 (BD)	48.5%
Group 2 (DFLE)	51.6%
Group 3 ( <i>Petit Robert</i> )	44.7%
Group 4 (without dictionary)	41.8%
Group 5 (had not done the text translation)	29.4%

- Obviously, the fifth group fared far worse than the others.
- The scores of those students who had worked with a BD were lower on the second than on the first test (60.3% vs. 48.5% of correct translations), which means that they did not retain all the words in memory. Those who had used the DFLE improved their scores very much (21.2% of correct translations on the first test, 51.6% in the second). The same is true for the group which used the *Petit Robert* in first translation (14.2% vs. 44.7%). The results of group 4 on the retention test were also better than in the text translation, but the difference was not so great (32.9% vs. 41.8%).

Bogaards interprets these data as follows (p. 100): “The students who used a BD seem to have written down the correct translations [in the first test] without being interested in the problems posed. The others [...] certainly were confronted more intensely with translation problems.” And he supposes that certain of these others may have tried to find the correct translation after the (first) test. However, this would mean that the duration of word retention was not the same for all subjects, and the results refer to a mixture of retention and interest in finding correct translations.

### Krantz (1991)

In this doctoral thesis published in book form, the author asserts (p. 42) that her study was conducted in 1980-1981, i.e. ten years before the publication. It is surprising that already in 1980, when PCs still were rare, the subjects used computerized dictionaries. Having been carried out in 1980-1981, Krantz’s investigation was the first on dictionary use in vocabulary learning and the first in which the look-ups were recorded on computer.

The author wanted to answer the following questions: “1. To what extent does vocabulary learning take place by simply reading words in context? 2. To what extent does vocabulary learning take place by both reading word in context and looking them up in a dictionary? 3. Which is the more efficient strategy under different conditions? 4. Which is

the more efficient type of dictionary, the monolingual or the bilingual one, for a particular group of readers?" (p. 11).

Although aware of the problems of word knowledge, she defined "known word" as "a word the reader was able to translate, explain or give synonyms for in the vocabulary tests in the experiment" (p. 30). As in most investigations, the retention of words was considered equivalent to vocabulary learning. In Krantz's study, the vocabulary test was administered immediately after the reading task.

The subjects were 54 Swedish "undergraduates doing their first term of English studies at the university". They had been studying English for ten years at school. Their task was to read an English book of about 150 pages in several reading sessions. One hundred forty-eight words occurring in this text were considered "to be both important for understanding the text, and likely to be unknown to a fair proportion of the students" (p. 31). A pre-test showed that on the average the students knew 35 of these words.<sup>163</sup>

During the reading, half of the subjects (chosen at random) were allowed to consult a BD, the others could use an MLD (LDOCE). Both dictionaries had been chosen "because they were available on computer tape" (p. 42). The students "were allowed to underline words and make notes in the books, but not to take their notes nor the textbook home between the reading sessions" (p. 43).<sup>164</sup>

Krantz describes the look-ups as follows: "When a word that the reader wanted to look up appeared in the text, he typed the word on the terminal key-board. After about 3 seconds the dictionary article, or if it was a long one, the first part of it, was displayed on the screen for 10 seconds. [...] If the reader was not able to read the article within the 10 seconds, or to understand the content of it, he was to press a key on the key-board, and the same article was displayed again." (p. 44) All look-up actions were recorded by the computer.

After reading the whole book (the number of reading sessions varying between two and seven among the students), the subjects did the vocabulary "post-test". It "was divided into two parts: one in which the words were given without a context, and one contextual part, in which the words were placed in sentences", which provided "little contextual support in the interpretation of the words". "Testees were asked to translate, give synonyms or otherwise show that they knew the meaning of the test-words." (p. 45)

Krantz presents an impressive amount of data concerning the relations between subjects' vocabulary knowledge, inference, look-ups, duration of reading and of look-ups, and use of the two dictionary types, but sometimes her presentation is quite confusing, because, among other reasons, she sometimes refers to a so-called "extrapolation" (which I cannot explain here), and to several pilot tests.

The results concerning actual dictionary use were as follows:

- On average, 1.7 words per page were looked up.
- The more proficient students (i.e., those who had greater knowledge of vocabulary) consulted the dictionaries far less than the others.

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<sup>163</sup> Curiously, among the words "likely to be unknown" there were frequent items like *failure*, *claim*, *approach* and *issue*. Did the author imagine that they were unknown to the students even after ten years of EFL learning?

<sup>164</sup> Two students in the BD group did not participate in the post-test, so the results are based on the data from 52 subjects (BD: 25; MLD: 27).

- About 42% of unknown target words were looked up. In the case of these items, the difference in the consultation rate of the two proficiency groups was not very great (36% vs. 43%).
- In 71% of the consultations, the target words were looked up on their first occurrence in the text. Some words were looked up two or three times.
- In the whole book, the BD group looked up 277 words, the MLD group little more than half that number (152). (Apparently certain students had little experience in the use of MDs.)
- On average, each look-up lasted 30.5 seconds. There was no difference between the two dictionary groups. (This is strange, because usually it is easier to consult a BD.)

Results concerning word retention (“learning of words”):

- On average, 23 (15.54%) of the 148 target words were retained. “The more proficient readers tended to learn a greater number of words than the less proficient, and they also learned a larger proportion of the unknown words.” (p. 117).
- 15% of those target words which were not looked up (i.e. their meaning was inferred) were retained. In the case of words looked up, the percentage rises to 25% (p. 118). Thus, “the READ-LOOK-UP strategy was 1.7 times more effective than the READ-ONLY strategy” (p. 109).
- The two dictionary groups retained almost the same number of target words: 23 in the BD group, 22.7 in the MLD group.

The author observes that the subjects “learned on an average only one fifth of the test-words unknown to them from the start – and this in spite of the fact that several of the words were looked up several times” (p. 118) and that “at the high proficiency level which our students had reached, the monolingual-bilingual dichotomy is of little importance for learning effectiveness” (p. 129).

In her conclusions, she points to the “inevitable unreliability of any test” (p. 132), recognizes certain deficiencies of her study and remarks that the results might be different if traditional dictionaries had been used (p. 130 f.).

### **Al-Alami (1992)**

[Diab & Hamdan (1999: 286)]

Diab & Hamdan provide only the following information:

Al-Alami (1992) used an experimental approach to measure the effects of using monolingual English dictionaries on the achievement of secondary school students in reading and vocabulary development. Dictionary use in the classroom was found to be influential in enhancing vocabulary development, but no evidence was established as to whether dictionary use affected the acquisition of certain reading skills such as evaluating the text and identifying the main idea.

### **Luppescu & Day (1993)<sup>165</sup>**

Among studies on dictionary use, this is one of the most cited. In the title and in the article, the authors refer to vocabulary learning; however, like certain other researchers, they in reality only investigated word retention for an extremely short period.

The subjects were “293 first- and second-year students studying English as a foreign language at two universities in Japan”. They “had completed 6 years of English instruction

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<sup>165</sup> My summary is based on the version published in 1995.

in high school” (p. 233). They were randomly assigned to two groups. The 145 students in the treatment group were allowed to use their BDs, while the 148 students in the control group had to perform the task without the help of dictionaries.

They were all asked to read a short story (about four pages), which contained 17 target words that had been “identified as words that participants in their study did not know or found difficult” (*ibid.*). Immediately after reading the text, the subjects took a multiple-choice vocabulary test in which there were “five choices per item: one key, three distractors and one *I don't know* choice”.

Results:

- On average, the treatment group obtained 50% better scores (i.e. had retained 50% more words) than the other.
- For certain words, this group did not obtain very good results. (The authors remark that in some cases the dictionaries “seemed to have a definite confusing effect [...] probably because of the large number of entries”, i.e. of senses.)
- The treatment group “took nearly twice as long to read the passage as did the other group” (p. 241).

Based on these results, Luppescu & Day claim “that the use of a bilingual dictionary by EFL students while reading can significantly improve indirect or incidental vocabulary learning” (p. 239). As was said above, in fact they investigated only word retention for a very short period.

### Fischer (1994)

According to the author, the aim of this study was to investigate “the effects of contextual and definitional information on vocabulary learning” (p. 551). In reality, she studied the comprehension of unknown words, the strategies employed in using these words, and – probably – the retention of these words for a very short period.<sup>166</sup>

The subjects were 94 German eleventh-grade high school students, aged 17-19, who had been studying English for seven years and were considered advanced EFL learners. Seven of them had to be excluded because they did not follow the instructions. The remaining 87 were assigned to four groups. These consisted respectively of 24 (group A), 22 (B), 21 (C) and 20 (D) students.

In previous research, 12 words had been “found difficult for students to comprehend” (p. 556). In the present study, all subjects were first given a list of these 12 target words on a pre-test “and had to state what each meant”, in German or in English (p. 557).

Then the groups received the following “learning material”: A – dictionary entries (taken from OALD) of the target words; B – a narration in which the words were embedded; C – both dictionary entries and text. Students in these three “experimental conditions were asked to read carefully through the information that they had received and

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<sup>166</sup> There are at least two facts that are unclear: 1) Fischer mentions “learning words” (in the title) and “remember the words”, but she does not make it clear whether or not the so-called “learning material” was taken away from the subjects when they had to write sentences and translate them. 2) She says that a test (or “word explanation” test) was given twice and that on both occasions “students were given the list of target words and had to state what each meant”. But apparently, the type of test used on both occasions was quite different, as will be seen below.

then to use each target word in a sentence”.<sup>167</sup> Students in group D (control group) “received the version of the story in which the target words had been deleted and were required to write a summary of the story either in German or in English” (p. 557).

After the task, the subjects in the three experimental groups were asked to translate their English sentences into German. This second task had not been mentioned before. Its objective was to find out whether the students had really understood the words.

The sentences written in English and the translations, as well as the summary written by group D, were evaluated by native speakers (two for each language). I cannot go into detail here about the coding of the data.

Fischer distinguished several strategies apparently employed by the students in the writing and translation of sentences. For example, in group A the subjects used one or more of the following strategies: in sentence writing, they copied one part of the definition or of the example, modelled their sentence after definition or example, or included one part of the definition; in the translation, they made use of the entire definition or of one part of it, or else they used a German word “that sounded like a word in the definition” (p. 558).

The pre-test had shown that almost all 12 target words were unknown to most subjects. Those which some students knew were not excluded from the analysis, because even for these the information given (entries and/or context) was utilized.

Main results:

- Sentence writing in FL: there was no significant difference between the three experimental groups as to the adequacy of the English sentences.
- Translation into L1: group A (the dictionary group) scored much higher than group B (the context group), the difference being statistically significant; group C was a little less successful than group A, i.e. the “availability of both sources of information [...] did not have an additive effect on students’ comprehension of unfamiliar words nor [...] on the accuracy with which they used the words” (p. 564). This can be explained – at least in the case of the subjects of this study – by the fact that “students relied mainly on the dictionary” (p. 565).
- Strategies employed by group A: 54% of the participants utilized the complete definition; 21% of these made mistakes in both tasks.

Fischer discusses the concept of context and the strategies of those who only read the text, but I omit her observations since this is not our theme.

In their brief summary, Dolezal & McCreary (1999: 33) assert that “the result, discussed at length, is that the contextual clues in the text, and their efficient use, are critical ‘for acquiring an adequate understanding of word meanings’”. This statement about the importance of context may be true for group B (context group), but it is not the main finding of Fischer’s study, which was intended to compare three different conditions. The main results are that there was no significant difference between the three experimental groups in sentence writing and that the dictionary group fared significantly better than the context group in translation.

### **Knight (1994)**

The author attempted to answer the following questions (p. 287): “1) Is there a significant difference in subjects’ vocabulary test scores after they have seen words in

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<sup>167</sup> Please see the previous footnote.

context [...] and when they have not seen the words in context [...]? 2) Is there a significant difference between vocabulary learning measures for low and for high verbal ability students? 3) Is there a significant difference between the vocabulary learning scores of students who use a dictionary and those who do not? 4) Is there a significant difference between reading comprehension scores for students who use a dictionary and those who do not?" The first three questions refer to incidental vocabulary learning, and the last one to reading comprehension.

In the study, a computerized dictionary was used. The "entries were based on definitions" in two print BDs (p. 296). "The computer-dictionary process simulated actual dictionary use in two ways: manner of look-up and type of definition provided. In order to look up any word, the subjects in the access condition first pressed the designated lookup key on the computer and then typed the root form of the Spanish word in the box." (p. 290) Obviously, the use of such a dictionary is different from consultations in a paper dictionary, but since the entries had been taken from print dictionaries, I summarize this study not in chapter 6, but here.

Knight consistently uses the term "definitions", so the reader assumes that the dictionary entries were monolingual; however, on the last (!) page, she reveals that they were bilingual.<sup>168</sup>

The subjects were 105 American second-year students at Central Michigan University. They were all native speakers of English learning Spanish.<sup>169</sup>

The researcher selected four Spanish texts, of about 250 words each and of similar difficulty level. Each text contained approximately twelve unknown words. Each subject was to read two randomly chosen texts, so that he or she would encounter 24 target words.

In accordance with their American College Test verbal scores, the students were divided into two groups: high and low verbal ability. The subjects in each of these groups were randomly assigned to a "dictionary or no-dictionary condition".

First, all students took a vocabulary test (pre-test), the aim of which was to verify whether the target words were known. On the same day, "they were given the no-exposure vocabulary test (i.e. a supply- and select-definition vocabulary test over the 24 targeted words in the text-set that students had not been assigned to read)" (p. 289). Knight explains that "students were asked to supply a definition (requiring a written English equivalent or definition of the targeted Spanish word)" or "to select a definition (requiring a selection from four possible English definitions or a fifth option, 'don't know')" (p. 288). It should be emphasized that in this "no-exposure" test, the supposedly unknown target words appeared out of context.

Two weeks later, they read the two texts selected for each of the subjects. The look-ups of the dictionary group were recorded electronically. After the reading, all students were asked to make an "immediate recall protocol", i.e. to "write in English everything they remembered from the text". According to Knight, this type of protocol is "an instrument considered by many to be the most appropriate measure of the text-reader interaction" (p. 288). This task had been announced beforehand. The protocols were later evaluated by the researcher and three Spanish language experts.

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<sup>168</sup> She says: "This study focused on bilingual dictionaries because they are more widely used by undergraduate FL students [...]." (p. 296)

<sup>169</sup> Coura Sobrinho (2000: 85) and Tono (2001: 20) claim that there were 112 subjects, but Knight asserts that seven were eliminated, "leaving the total number of subjects at 105" (p. 288).

“Following the last recall protocol, students were administered an unexpected supply-and select-definition vocabulary test over the twenty-four targeted words in the text-set that they had just read.” Two weeks later, they took the same test “in order to measure long-term retention” (p. 290).

Main results:<sup>170</sup>

- Reading comprehension:
  - The dictionary group obtained significantly higher scores than the no-dictionary group (p. 292). However, this overall result was due to the low verbal ability group. In the high verbal ability group the difference was not significant (p. 293).
  - The high verbal ability group scored significantly better than the low verbal ability group (p. 290).
- Incidental vocabulary learning:
  - Knight claims that in both testing modes (“supply definition” and “select definition”) “all subjects learned more words when they were exposed to them in context than when they were not” (p. 291).
  - In both testing modes, students of high verbal ability scored significantly higher than the others.
  - In both testing modes, the dictionary group obtained significantly higher scores than the no-dictionary group. However, in the high verbal ability group, the difference was not significant (p. 292).
- Reading time: The dictionary group spent more time on the texts than the no-dictionary group.

### **Nist & Olejnik (1995)**

In this study, a specific dictionary feature, *viz.* definitions, was investigated (together with the influence of context). Therefore, it was included in subchapter 5.1.2.

### **Hulstijn, Hollander & Greidanus (1996)**

As the title indicates, the authors wanted to study the influence of marginal glosses, dictionary use and re-occurrence of unknown words on incidental vocabulary learning. The dictionaries were BDs, and the marginal glosses (MGs) provided nothing but equivalents.<sup>171</sup>

The subjects were “78 Dutch first-year university students of French” who “were considered to be advanced learners of French because they had studied French for 6 years in high school and almost one year at the university” (p. 329).

Their task was to read a French short story which contained many low frequency words. It was slightly adapted so that 8 of the 16 supposedly unknown target words appeared three times and 8 only once.

The 78 subjects were randomly assigned to one of three groups: the BD group, the MG group, or the control group, whose members had no access to any type of information on word meaning.

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<sup>170</sup> I present even those main results that do not concern dictionary use.

<sup>171</sup> Studies in which the effects of marginal glosses alone was investigated (e.g. Watanabe 1997) are not included in this book. Summaries of reports on research about electronic glosses are to be found in 6.1.

In the MG group, “the 16 target words, along with 16 other low frequency words, were printed in bold face”; in order to render the target words less salient, “a Dutch translation was printed in the right-hand margin” for all 32 words (p. 330).

After the reading, vocabulary tests were administered, but the students had been told that they would have to answer comprehension questions. “This was done to create conditions conducive to incidental vocabulary learning: Students’ attention was turned away from *particular unknown words* and directed towards an understanding of the *text as a whole*” (p. 331).

In the first test, the students were asked to mark, on a list of 32 words (16 target words and 16 other words that appeared in the text), which of them had occurred in the short story, and to write down their meanings in Dutch or in French. The BD group was also requested to indicate which words they had looked up during the reading session.

In the second “test”, the subjects had only to state which of the 16 target words they had known before the reading. Subsequent analysis showed that they had not been familiar with them.

In the third test, the students were asked to again provide the meanings of the 16 target words, which this time were given “in the context of a few lines taken from the original text”.

#### Results:

- All students “more readily recognized target words that had appeared three times than target words that had appeared only once” (p. 331).
- The 24 students of the BD group consulted the dictionary very seldom; four of them looked up no words at all, while the other twenty looked up on average only 1.9 word(s). The authors conclude “that advanced learners, when reading a text for global comprehension, do not feel an urge to interrupt the flow of reading by investing considerable time and mental effort to infer or look up the meaning of unknown words” (p. 335).
- As to word retention (“incidental learning”), the MG group had the highest scores in the first test (where the words appeared in isolation), while the BD group did not perform significantly better than the control group. “The latter result can be simply explained by the fact that students in the [BD] group seldom used the dictionary” (p. 332).
- In the few cases in which the BD group consulted the dictionary, “their retention scores were even higher than those of the MG group” (p. 333).
- In the third test, in which the target words appeared in context, the results – concerning retention – were very similar to those of the first test.

It seems clear that the retention rate is lower when the meaning of unknown words is not provided or is not looked up, as was the case of the control group and the BD group, respectively. But it should be emphasized that consulting the BD led to better results than the “looking up” of marginal glosses.

#### Grabe & Stoller (1997)

This case study about reading and vocabulary development is described in 4.1.

### Aizawa (1999)<sup>172</sup>

[Ronald (2004: 87 ff.)]

Here is part of Ronald's summary:

The questions addressed [in Aizawa's study] are whether bilingual dictionary use helps learners read an L2 text more accurately, whether this dictionary use increases retention of unknown words, and whether vocabulary acquisition levels are higher for more proficient learners both with and without dictionaries.

A total of 308 [Japanese] high school students took part [...]. Following a vocabulary test, the [EFL] learners were divided into two nearly equivalent groups, one assigned a reading with dictionary condition and one a reading without dictionary condition.

Two texts were selected as reading passages, and both edited to include 12 target words [each], the meaning of which should be inferable from context. The texts were each accompanied by eight comprehension questions. Forty minutes was allowed for reading the two texts and answering the 16 questions. Following this, after materials had been collected, a surprise 10-minute vocabulary test was conducted. This was a multiple-choice select definition test of the 24 target words. The same test, with test items reordered, was conducted two weeks later.

Results according to Ronald:

- Reading comprehension: the Text Only group [TG] scored slightly, but significantly, higher than the Dictionary group [DG].
- Immediate vocabulary test: the DG's scores were almost 50% higher than the TG's scores.
- Delayed vocabulary test: the TG scored better than in the former test, but still the DG scored significantly higher than the TG; in the case of the more proficient learners there was almost no difference.

Ronald cites certain of Aizawa's remarks about the results, and he himself comments on them. For example, he mentions the possibility that the TG subjects looked up certain target words between the two vocabulary tests.

### Fraser [Carol] (1999)

The author investigated “the lexical processing strategies (LPSs; [...]) used by L2 learners when they encounter unfamiliar vocabulary while reading and the impact of these strategies on vocabulary learning” (p. 225). As in other studies, she considers word retention for a short period as vocabulary learning. Fraser cites three LPSs: “ignore and continue reading, consult a dictionary or another individual, or infer word meaning on the basis of linguistic and contextual clues” (p. 226).

The subjects were 8 native speakers of French, probably Canadians, “enrolled in an intermediate level ESL course” at a university. Over five months, the researcher met with them individually nine times. In these sessions the subjects received training in metacognitive strategy (especially about LSPs), read several texts (being allowed to use BDs or MDs), took a reading comprehension test and a vocabulary test after each reading and “engaged in an oral interview that focused on eliciting a retrospective think-aloud

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<sup>172</sup> Bibliographic data according to Ronald (2004): Aizawa, K. (1999). *A study of incidental vocabulary learning through reading by Japanese EFL learners*. Unpublished PhD Thesis. Tokyo: Tokyo Gakugei University.

protocol of the LSPs they had used to deal with unfamiliar vocabulary while reading” (p. 228).

One week after each reading, the 8 subjects “completed a cued recall task to monitor the effect of instruction on word learning”. The test “consisted of 10 words selected from those each participant had indicated to be unknown and that had been focused upon in the retrospective think-aloud interview” (p. 228).

#### Results:

- Percentages of cases in which LSPs were employed when unknown words were encountered: infer – 44%; consult – 29%; ignore – 24%. Sometimes the unfamiliar word had not been noticed (3%). In 29% of the cases, two strategies were used; usually inferring was the first of the two.
- Effectiveness of LSPs on comprehension: “78% of consults and 52% of inferences resulted in full comprehension and another 20% of inferences resulted in partial comprehension” (p. 231)
- Effectiveness of LSPs on one-week word retention: “when participants consulted or inferred alone, they recalled the meaning they had determined about 30% of the time (30% and 31%, respectively)”; “when they inferred and then consulted, their recall increased to 50%” (p. 236).

Fraser remarks that “[...] this study suggests a reevaluation of the minimal role often accorded to dictionary use in L2 reading class. Results accentuate the importance of consulting both for effective determination of word meaning and for vocabulary learning. This finding is consistent with research that has found that consulting a dictionary enhances reading comprehension (Knight, 1994) and vocabulary learning (Knight, 1994; Luppescu & Day, 1993) of L2 learners“ (p. 239).

### Gonzalez (1999)

The first part of this article’s title is “building vocabulary”, and in the text Gonzalez mentions vocabulary learning. Nevertheless, his study deals with reading comprehension. Since he specifically investigated dictionary definitions, his report is summarized in 5.1.1.

### McCreary & Dolezal (1999)

This study, in which the researchers wanted to investigate the effects of context and dictionary consultations on the learning of words, is described in 5.2.2, because only one dictionary was used by the subjects.

### Iwai (2000)<sup>173</sup> [Ronald (2003: 302 ff.)]

The most relevant parts of Ronald’s summary are the following:

Twenty-four Japanese learners of English, in their final year of high school, took part in this study. They were all from the same class and were divided randomly into two groups. Class grades and a vocabulary test confirmed that the two groups were equivalent in terms of language

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<sup>173</sup> Bibliographical data provided by Ronald: Iwai, Y. (2000). *Dictionary use in context and vocabulary acquisition*. Unpublished M. A. dissertation. Birmingham: University of Birmingham.

proficiency. The experiment began with a questionnaire asking about dictionary use habits, followed by a reading passage of over 1,300 words from an English-language Japanese newspaper. Fifteen words in the passage were underlined and numbered. They were selected on the basis of being probably unknown to the students [...]. The two groups of learners were given different instructions about how to deal with the target words when encountered in the text. The Guessing group learners were asked to identify the part of speech, to look at the surrounding context in terms of syntax and semantic relationships, to guess the meaning from context, and then to look up the word in their English-Japanese dictionary and write it down. The No Guessing group learners were simply asked to give the meaning of the word if known, and if not to look it up in their English-Japanese dictionary and write it down. Following the reading, the text and answer sheets for the targeted words were collected and the learners were given a simple test in which they were asked to give the translation equivalents for the 15 target words. This test was administered three more times: one day, five days, and twenty days after the reading.

Results (only for the words that were looked up):

- “Guessing group subjects were, on average, able to give the Japanese equivalents for around twice as many looked-up target words as No Guessing group subjects.”
- “[...] overall, retention rates for both groups fell steadily over the four sets of tests.”

After certain critical comments on the results and proceedings, Ronald remarks that Iwai’s study illustrates “how the use of a small number of test items can easily affect the reliability of a study of vocabulary acquisition” (p. 305).

### Dziapa (2000)<sup>174</sup>

[Lew (2004: 31)]

Lew describes this study as follows:

Dziapa (2001) compared the effectiveness of vocabulary acquisition through reading by Polish learners of English using bilingual and monolingual dictionaries. Dziapa worked with two groups of learners: beginners and intermediates. Within each group, subjects were randomly assigned to one of two dictionary conditions, a monolingual learner’s dictionary and a traditional bilingual dictionary. Overall, results point to an advantage of the bilingual dictionary for beginners, and a relative lack of such advantage for intermediate learners. However, the direction and magnitude of this advantage also depends on the type of lexical tasks: the monolingual dictionary seems to be at its best in tasks requiring users to provide definitions.

### Szymańska (2001)<sup>175</sup>

[Dziemianko & Lew (2006a)]

Dziemianko & Lew provide the following summary of this study:

<sup>174</sup> Bibliographical data according to Lew (2004): Dziapa, Edyta. 2001. *The relative effectiveness of vocabulary acquisition through reading by Polish learners of English using two types of dictionaries: monolingual and bilingual*. M.A. diss., Adam Mickiewicz University.

<sup>175</sup> Bibliographical data according to Dziemianko & Lew (2006a): Szymańska, Agnieszka. 2001. The usefulness of the Cambridge International Dictionary of English in teaching vocabulary to Polish intermediate students. M.A. diss., Adam Mickiewicz University.

Szymańska (2001) tests the effectiveness of the *Cambridge International Dictionary of English* entries against a traditional bilingual dictionary in vocabulary teaching and vocabulary acquisition with intermediate Polish learners of English (all high-school students). The study reveals an advantage of the bilingual dictionary which, however, diminishes with time. Instruction in the use of the dictionary appears to improve its effectiveness in aiding production and word retention. Also, the dictionary users express favorable opinions of the dictionary in feedback questionnaires. Teacher questionnaires reveal that the majority of teachers do not normally train their students in dictionary use. Szymańska uses a quasi-experimental setup, with the three groups (*Cambridge International Dictionary of English*, bilingual, control) possibly differing in English language proficiency level, thus the results must be seen as tentative.

### **Ronald (2002)**

Please see a brief summary in 5.2.2.

### **Wingate (2002)**

The author studied word retention as well as reading comprehension. Please see the summary in 4.1.

### **Hill & Laufer (2003)**

Since in this investigation an electronic dictionary was used, the report is summarized in 6.2.

### **Iu (2003)**

At <http://hub.hku.hk/handle/123456789/31029>, there is the following abstract of this master's dissertation:

The present study aims at investigating the impact of dictionary use in four conditions, namely (1) Chinese translations only, (2) English explanations only, (3) Chinese translations with examples of word usage in English, and (4) English explanations with examples of word usage in English, on incidental vocabulary learning and long-term retention of words. The subjects are 193 secondary six [sic] students in the North District of Hong Kong SAR. They were divided into four groups and were asked to read a text with different conditions of dictionary use which were presented in the form of word lists. An immediate post-test and a delayed post-test in the form of a vocabulary quiz were used to test students' word growth through reading and word recall. Results of the study indicate that students using dictionary definitions in Chinese did much better than those using dictionary definitions with English explanations in both of the post-tests. It was also found that the addition of usage examples caused no significant difference to students' word growth and word recall. Findings of the study suggest that dictionary definitions in English do have the extra credit of motivating students to examine the detailed information given in the whole entry, instead of just focusing on a fragment. Other findings give language teachers meaningful insight: knowing students' needs, problems, opinions and the

reasons behind their performance in the learning process is crucial for adopting the most appropriate teaching pedagogies and materials.

### **Conceição (2004)**

In this doctoral thesis, the author studied, among other things, vocabulary learning and the influence of dictionary use on word retention. Asserting that most other researchers had investigated the retention of lexical items in short-term memory (p. 99), she wanted to verify retention after a longer period, which, in this case, was one week.

The 51 subjects were Brazilian university students enrolled in an ESP course.

First they were administered a vocabulary test, the results on which showed that their lexical knowledge was sufficient for the reading task. After the reading of an English text during which they were allowed to use BDs, they filled in a retrospective questionnaire about their strategies, one of which was the use of dictionaries. One week later, they took a word retention test.

Since sixteen students (i.e. 31.4%) had not used dictionaries, Conceição was able to evaluate the influence of dictionary use.

In the retention test, the students were asked to choose one of four statements about those 18 lexical items that had been looked up by 70% of the subjects: 1) “I don’t remember having seen this word before.” – 2) “I’ve seen this word before, but I don’t know what it means.” – 3) “I’ve seen this word before, and I think it means .....” – 4) “I know this word. It means .... .”<sup>176</sup>

The author attributed between one and three points to the answers.

Results:

- of the 35 students who consulted the BD: 1 point – 22%; 2 points – 48%; 3 points – 30%.
- of the 16 students who did not use any dictionary: 1 point – 24%; 2 points – 45%; 3 points – 31%.

Since the differences are not statistically significant, Conceição concludes that dictionary use “does not contribute significantly to retention” (p. VI).

It might be argued that the size of the two groups was very different (35 vs. 16 subjects).

### **Dziemianko (2010)**

Since in this study not only a paper dictionary but also an electronic dictionary were used, the abstract is presented in subchapter 6.2.

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<sup>176</sup> The author states that this test “was adapted from the test developed by Paribakht & Wesche (1993)” (p. 107).

## 5. Studies of specific dictionary features and of specific dictionaries

Studies in which the use of specific dictionary features (e.g. definitions) or the use of specific dictionaries was investigated cannot be taken as research on dictionary use in general. Therefore, such studies were separated from the others and brought together in this chapter, which still deals only with print dictionaries.<sup>177</sup> Its two subchapters (5.1, specific features and 5.2, specific dictionaries) are each subdivided; i.e., a distinction is made between studies on actual dictionary use and those on the effects of consultations.

### 5.1 Research on the use of specific dictionary features

#### 5.1.1 Actual use

##### Jain (1981)

The author discusses certain features of English MLDs, especially meaning explanation. He wanted “to show that comprehensive grammatical information is a necessary but not a sufficient requirement for the learner to use the dictionary successfully in the productive mode”. In a test which he himself calls an “exercise”, students were asked to choose, after consultations in three MLDs, the appropriate word out of two or three options presented in isolated sentences. Example: “It wasn’t a big fire, but did you see that their house was ablaze/on fire/alight?” Jain does not provide any information about the participants or quantitative data. As the students made many mistakes, he explains why, showing several insufficient MLD definitions.

##### Jorgensen (1984) [Miller & Gildea (1984: 14 f.)]

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<sup>177</sup> In chapters 2 (on surveys) and 6 (on electronic dictionaries), there is no such differentiation.

The author reports a study which is summarized by Miller & Gildea as follows:

[...] Jorgensen (1984) developed a simple questionnaire. It was based on 40 words (20 common words and 20 relatively rare words). For each word, phrases defining two different senses, with a sentence to illustrate each sense, were taken from a school dictionary. The words were then replaced in the illustrative sentences by nonsense [words], and people were asked which definition of the nonsense [word] was most appropriate in the context provided by the sentence. For example, one of her items presented this sentence:

THE SNOW WAS HATTAY WITH THE WINDOWS.

and then two definitions for “hattay” were given: 1. LEVEL, FLAT, SMOOTH. 2. AT THE SAME LEVEL.

Subjects were asked to choose the better of the two senses of “hattay” as it was used in the illustrative sentence.

[...]

This questionnaire was given to 20 Princeton undergraduates and to 20 fourth grade children. College students identified the correct sense for 83% of the items; fourth graders for only 63%.

Miller & Gildea claim that “the fact that adult performance was not perfect suggests that the illustrative sentences found in school dictionaries may leave something to be desired”. In reality, it was not the illustrative sentences, but rather the definitions that were inadequate.

### Tono (1987)

My summary is based on chapter 8 of Tono (2001), which is a revised version of Tono (1987). The bibliographical data of this paper are lacking in the book’s bibliography. I found them in Bogaards (1991a).

As a matter of fact, the author did not investigate actual dictionary use; but since his methodology made it possible to find out how the subjects would consult dictionaries if they had to, the study is described here and not in chapter 2. The same applies to Bogaards (1990, 1991a, 1992, 1992a).

Tono wanted to investigate “idiom look-up strategies”. After discussing the term *idiom* and adopting the classification presented in the *Oxford Dictionary of Current Idiomatic English* (1985), he announced that he would “examine the dictionary user’s strategies for looking up these different types of idioms, especially whether there is any preference for the headword which they look up first according to the types of idioms” (p. 118).

The subjects were 129 Japanese undergraduate students at Tokyo Gakugei University, a teacher’s college. Forty-five of them were majoring in English. The others “took an English class just twice a week”. Those “who were majoring in English were more likely to be exposed to English dictionaries” than the others (p. 119).

Each participant received a list of 63 idioms and was asked to choose the headwords under which he or she would look them up.

Tono shows a table with all 63 idioms (several types being grouped together) and the headwords that had been chosen by the 45 English-major students and by the other 84 EFL learners.

Having classified the idioms according to “phrase patterns” and “clause patterns” into twelve types (e.g. “V+O+A” for “take sth amiss”), the author indicates which component

had been preferred in the case of each type (p. 124). In a second table, he shows the differences between English majors and non-English majors. I must omit these details here. In the discussion of the data, he asserts “that there are some fixed strategies for idiom look-up and that the users follow the strategies in order to access the information they need” (p. 139).

One very important and interesting part of his study is the result of a verification in eleven dictionaries of the headwords under which the idioms are presented. In one table, Tono shows, for each of the eleven dictionaries, “the percentage of coverage of those idioms for which the subjects were unanimous about look-up words”; elsewhere, he “describes how each dictionary presents the idioms in cases where the subjects [...] were not unanimous about the look-up words” (p. 135).

His findings include the following: “[...] the treatment of hard-to-look-up idioms depends on such factors as the dictionary’s cross-referencing policy and the space available for cross-references” (p. 136) and “[...] there is a general agreement between the user’s expectation and the lexicographer’s in the case of easy-to-select idioms” (p. 137). Nevertheless, he claims that there is “a mismatch between the user’s idiom look-up strategies and the actual presentation of idioms in a dictionary” and that “[o]ne of the reasons for this gap is the lexicographer’s lack of knowledge about the user’s look-up habits” (p. 139). At the end, Tono acknowledges that his study “is by no means conclusive” (p. 142).

### Bogaards (1990)

This article, together with Bogaards (1991a), Bogaards (1992) and Bogaards (1992a), reports studies of the strategies users employ when trying to find multi-word items (MWIs) in dictionaries.<sup>178</sup>

In fact, in Bogaards (1990), the author reports on two investigations.

#### First study

The subjects were 28 Dutch third year university students majoring in French. Bogaards showed them a list of 16 French MWIs and 16 Dutch MWIs, all of them consisting of noun and adjective. In one group of these MWIs, both components were frequent words, while in another one both were rare words, and in a third group one

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<sup>178</sup> In the English abstract, the author uses the terms “expression composed of more than one word”, “collocations” and “more or less fixed phrases”. Bogaards (1991a) employs the expressions “idioms and other fixed phrases”, “collocations” and simply “expressions”. In French, Bogaards (1992) uses the term *collocations*, but not all target expressions were collocations (*collocations* in French, *Kollokationen* in German) in the strict sense (i.e. as Hausmann 1989 defines them). There is an immense literature on collocations and idioms. As Cowie (1998: 4) points out, “In phraseology [...], it is not uncommon for individual scholars to apply different terms to the same category (or the same term to different categories).” Cowie (1981: 226) had distinguished “open collocations”, “restricted collocations”, “figurative idioms” and “pure idioms”. Like many other authors, Bogaards (1991: 206) asserts that “the boundary between real idioms and fixed phrases where one of the elements involved keep more or less its ‘litteral’ [sic] meaning is often far from clear”. I will use the term *multi-word item* (abbreviated MWI), even though collocations, in the strict sense, are not lexical items.

component was frequent and the other one rare. The subjects were asked to underline the word which they would look up to find the MWI in a dictionary.

Results:

- In the third group, the students underlined mostly the rare component (in 93% of French MWIs and 76% of Dutch MWIs).
- In the first group (in which both components were frequent), the subjects tended to choose the noun: in French, 76%; in Dutch, 70%. In the second group, there was also a slight preference for the noun.

### Second study

Again the subjects were asked to underline the word they imagined to be the headword under which they might find the MWI; but this time 646 native speakers of various languages participated, and the components of the MWIs were not only nouns and adjectives but also verbs and adverbs. Bogaards selected 52 MWIs in French and 52 in Dutch. Each list was divided into two (in order not to tire the students out), so that a list of 26 MWIs was submitted to each subject.

Six hundred fifteen lists were analysed. Those with French MWIs came from 287 French native speakers (143 high school students and 144 university students majoring in psychology) and from 51 foreigners studying French in France; the task with the Dutch MWIs had been performed by 244 native speakers of Dutch (116 high school students and 128 psychology majors) and by 33 foreigners studying Dutch in the Netherlands.

Bogaards shows all 104 MWIs and the results, distinguishing, in each language, between high school and university students. Having noticed that there was a significant difference, not between these two groups but rather between native and non-native speakers, he takes into account only the native speakers' choices when interpreting the data.

Main results (p. 101):

- For the native French speakers, word frequency plays a major role (they choose the less frequent words); they then observe the syntactic structure, preferring the independent elements, e.g. verbs.
- The native speakers of Dutch are interested primarily in parts of speech, choosing mostly nouns, then adjectives and verbs. Word frequency is less important to them.

### **Bogaards (1991a)**

Since the results of Bogaards' (1990) study had indicated that the word frequency of the components of MWIs<sup>179</sup> is an important factor in the subjects' choice of look-up strategy, the author wanted to find out whether differences in word frequency play some role.

He prepared two lists, each containing 35 French MWIs. In the first one (list A), there were 23 expressions consisting of "article + noun + 'de' + noun" and 11 consisting of "verb + noun". In the second one (list B), all 35 expressions contained "verb + noun".

Bogaards established seven frequency classes (in decreasing order, i.e. with "1" referring to the highest frequency): 1-200, 201-500, 501-1,000, 1,001-2,000, 2,001-3,000, 3,001-5,000, more than 5,000. After verifying the frequency of each of the MWI

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<sup>179</sup> Cf. the former footnote.

components in a frequency dictionary, he indicated (using the letters “a” through “g”) to which frequency classes the components belonged. For example, “*un homme de paille*” was marked “ae”, because “*homme*” and “*paille*” are words belonging to first (= a) and the fifth (= e) frequency class, respectively.

The subjects were native speakers of French: 60 university students and 48 high school students. The two lists were distributed at random in each group.

The participants’ task was the same as in Bogaards’ (1990) study: to underline “the word where they would look up the expression in a French dictionary if they had to verify the meaning of the whole expression” (p. 207).

Presenting the data referring to the two lists, the author shows the frequency class of each MWI component, distinguishes the two groups of subjects, and indicates whether the first or the second component had been underlined.

General result:

- “The whole of the results from A and B [...] seems to indicate that, taken apart, frequency makes itself felt at distances of more than 2000 words; beneath that limit, word class [i.e. part of speech] plays a certain role” (p. 211).

For example, if the verb of an MWI belongs to the 3,000 most frequent words and the noun is among the 500 most frequent words (which means that the verb is much less frequent than the noun), the subjects tended to choose the verb.

Bogaards concludes that “the French dictionary maker can save some space by affording no more than a single mention of those fixed phrases which are composed of two words with clearly different frequencies” (p. 212).

### Bogaards (1992)

The study reported in this article preceded those described in Bogaards (1991a, 1992a). It was first reported at a congress in 1989 and is cited in Bogaards (1991a). On the other hand, the author mentions a paper of his published in 1990.

His aim was the same as that of the investigation reported in Bogaards (1990), and he used the same 26 MWIs<sup>180</sup>; however, this time the subjects were FL learners (of French). There were five groups of Dutch native speakers (totalling 275): 83 university students majoring in French (45 first-year students and 38 fourth-year); 51 English-major students who had been studying French for five or six years; 88 high school students with four years of French studies; and 53 students of a nursing school who had been studying French for three and a half years on the average.

Main results:

- In all five groups the choice of the MWI component differed significantly from the one found among the native French speakers of Bogaards’s (1990) study. More precisely, “non-native speakers employ other search strategies than native speakers”, they tend to behave as in their L1; thus, the Dutch students, “who prefer nouns and care little about syntactic structure”, use the same strategy in French, i.e. an FL (p. 180).

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<sup>180</sup> Cf. footnote 178.

- The strategies of FL learners with the same native language are influenced by their level of proficiency in the FL.

### Bogaards (1992a)

This study is very similar to the one reported in Bogaards (1991a). However, this time the MWIs were included in sentences. The subjects were 62 French high school students, but only 52 “questionnaires” were analysed.

General result:

- The participants tended to choose the less frequent component (i.e. the word that in general is less frequent than the other one), provided that the difference of the frequency between the two components was greater than 2,500.

### Tono (1992)

[Tono (2001: 167-173)]

The author wanted to verify the influence of “menus” on look-up success. He asserts not only that he himself had suggested “that the menu system, a list of senses without examples and detailed information, should be put at the beginning of each multiple entry”, but also that after he had conducted the study reported in Tono (1984), “many English-Japanese dictionaries adopted this menu system as an innovative device” (p. 167).<sup>181</sup>

The subjects were “57 first-year students, majoring in law at Keio University, and 182 third-year students from Setagaya High School” (p. 169).<sup>182</sup> The author claims that “the difference in the levels of English proficiency [...] was not so serious a problem, because the English sentences to be translated into Japanese [...] were not too difficult for junior high school students” (*ibid.*).

Their task was to translate nine English sentences into Japanese. Each sentence contained one artificial word, the sense of which could not be guessed from context, e.g. “stup”, in “If you say something like that, I’m sure he will be stup about it.” For each of these artificial words, Tono had worked out an entry which contained at least two senses, and for each sense some additional information was given (mainly prepositions). For example, for “stup” there were the senses “angry” and “sorry”, and the prepositions were “of” and “about” (thus: “stup of” = sorry; “stup about” = angry). Such information would allow the student to choose the right sense (i.e. “angry”) in the sentence quoted above.

Each group was divided into two. The dictionary entries available for 30 college students and 76 high school students contained menus (lists of senses), while those to be consulted by the other 27 college students and 76 high school students did not contain them.

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<sup>181</sup> In his article on semi-integrated microstructures, Wiegand (1996: 20f.) uses a quite different term instead of *menu*. I myself would prefer the term *list of senses*, which appears to be clearer than *menu* or Wiegand’s expression (the translation of which is more or less “comment for orientation”).

<sup>182</sup> At least in this new version, Tono holds that there were 182 high school students; but the data in the respective table indicate that there were only 152, divided into two groups of 76.

In the translations, Tono verified only whether the subjects had found the correct sense; i.e., he did not check to see whether the translations were correct or adequate.

Main results:

- Among the high school students (who were less proficient in dictionary use), the “menu group” scored significantly higher than the other group.
- Among the college students, the difference was not significant.

Tono concludes that the “menu proves to be an effective aid for poor dictionary users” (p. 173), but he advises the reader “to regard this study as [only] quasi-experimental” and acknowledges that a “more controlled experiment might yield slightly different results” (p. 170).

### **Bogaards (1997)**

[Dolezal & McCreary (1999: 16)]

This is one more of Bogaards’ studies on the strategies users employ when looking for multi-word items (cf. Bogaards 1990, 1991a, 1992, 1992a). This time the author apparently restricted himself to collocations, as defined by Hausmann (cf. footnote 178). Dolezal & McCreary provide the following summary:

Bogaards examines Hausmann’s theory of the analysis of collocations and tests it on the dictionary search strategies of learners of French and Dutch, discovering different strategies for each group. He finds that the Dutch students learning French looked up the base first and the collocator second, and looked up the noun first in noun-adjective and noun-verb collocations. The French-speaking students of Dutch, however, did not have a clear preference for the base or collocator, instead preferring to look up the noun first and especially to look up infrequent words.

### **Bogaards (1998a)**

As the title of this article clearly indicates, the author wanted to find out what types of words language learners look up. The subjects were 45 first-year students of French at two Dutch universities. They were asked to read three French texts, which were presented in different orders.

In the case of the first two texts, the subjects were requested to just underline the words they would look up in a BD if they had to translate the texts into their L1. Forty students performed this task.

The third text had to be translated with the aid of the subjects’ BD, and the words looked up had to be underlined. This text (in reality three different ones, since the three texts had been presented in different order) was translated by 13 to 18 students.

Bogaards had selected “three texts of quite different characters” (as a matter of fact, in one case there were only isolated sentences) so that the results might not be influenced by the text type; but all of them contained the same number of words (*viz.*, 155), and in all three the same 15 target words occurred. These belonged to one of three categories: a) “words which were unknown to (most of) the subjects (henceforth *infrequent words*)”; b) “well-known word forms which were used in a particular, often idiomatic sense, which was

unknown to (most of) the subjects (henceforth *allosemic words*); c) “words with forms that look like words in the native tongue but with quite different meanings (henceforth *faux amis*)” (p. 154). These different types were distributed in different ways in the three texts. Bogaards asserts that it was “quite impossible to guess the meanings of the target words from the context” (p. 154).

All cases in which one third or more of the students translated the target words correctly without consulting their dictionary were eliminated. Thus, the analysis of the second task is based on 29 items: 11 infrequent words, 10 allosemic words, and 8 *faux amis*.

Results:

- There was no significant difference between the two tasks as to the types of words underlined.
- The percentages of all types of underlined words were a little higher in the translation task than in the first task.
- The students underlined many more infrequent words (62%) than *faux amis* (20%).
- In the case of allosemic words, there was a difference between two texts: in the third “text” (i.e. the isolated sentences), the percentage of underlined words was similar to that of infrequent words, while in the first one it was much higher than the percentage of infrequent words (*viz.*, 87%).
- The mistakes made in the translations showed the following percentages of unsuccessful look-ups: words of type “a” – 29%; type “b” – 41%; type “c” – 53%.
- Percentages of mistakes made without dictionary use: words of type “a” – 51%; type “b” – 77%; type “c” – 96%.

Bogaards himself called his investigation a “small-scale study” (p. 153).

### **Gonzalez (1999)**

In his article, and even in the title, the author several times mentions vocabulary learning (“building vocabulary”, “word learning”), but his study deals with dictionary use in reading comprehension. Having read McKeown (1993), he was particularly interested in comprehension problems caused by dictionary definitions.

The subjects were ESL students “from the second or intermediate tier of ESL language instruction in the City University of New York” (p. 266). Gonzalez does not reveal their number explicitly, but there must have been more than 75. About 40% were “Latino”, 33% Asian, and 27% Haitian. They all had been living in the US for three or four years.

They were “required to maintain weekly a collection of three newspaper articles read at home”. The articles were selected by themselves “according to their interests and motivations” (p. 266).

Students were instructed to write a brief summary or comments about each article. From each article students were told to select five unfamiliar or unknown words in context, which they considered necessary for comprehension, and to either guess from context or refer to the dictionary for meaning. Each word with its accompanying definition was recorded along with the summary (p. 267).

“By the end of the semester, each student had amassed over 36 articles and over 180 vocabulary words with their respective definitions.” Gonzalez selected 15 notebooks and interviewed those subjects who had maintained them, asking them, for example, “about the amount of time taken for the task, the kinds of problems they encountered in performing the task, and for the kind (bilingual or monolingual) and name of dictionary used for their reading activity” (*ibid*).

Unfortunately, the author does not reveal the percentages, either of students’ inferences and look-ups or of MDs and BDs consulted. Of course, it would be important to know how many words had been looked up in MDs, since Gonzalez was interested in definitions. It is not clear either whether the definitions written down by the students had been imagined by themselves or had been copied from the dictionary.

The author “compared the lexical term definitions with the text representation or context” (p. 267), which apparently means that he verified in the dictionary whether the definitions provided were adequate for the contexts in which the words occurred in the newspaper articles.

Result:

- “Approximately 79% of the word entries provided acceptable definitions when matched with the text representation. Approximately 2% of the entries provided no definitions, and approximately 19% proved unacceptable ones” (p. 268).

Gonzalez mentions certain student opinions (e.g. that dictionary work is “laborious but necessary” and “for a small minority of students the activity was frustrating because the dictionary did not provide adequate definitions”); and in the item, “implications to ESL vocabulary learning”, he makes comments such as “[d]ictionary consultation is the initial step in learning a new word” (p. 269).

### **Dziemianko (2004)**

This is a first report on a study described in more detail in Dziemianko (2006). The author wanted to investigate the user-friendliness of different forms of presentation of syntactic information on verbs common in recent English MLDs (CIDE, COBUILD2, LDOCE3, OALDCE6). *User-friendliness* is defined as “easy accessibility of information” (p. 683).

The subjects were 606 Polish students: 325 were third or fourth grade high school students (HSS), and the others were majoring in English at a Polish university. The high school students’ proficiency level was “at most upper intermediate”, while the university students (US) were “at least advanced learners of English” (p. 885 f.).

Dziemianko distinguishes 10 types of presentation of verb syntax: She differentiates two types of definitions (analytical and contextual), and breaks down each of these two types into “formal codes”, “functional codes” and “pattern illustrations”. Both formal codes and functional codes are subdivided: the information may be given in the verb entry or in an additional column. For these ten types she uses acronyms such as AFO (syntactical information presented in an entry with analytical definition and with formal code) and CFUNC (entry with contextual definition, functional code in an extra column).

The researcher chose 15 target words “likely to be unknown to many advanced learners” (p. 684).

In a pretest, “subjects were asked to explain either in Polish or in English the meaning or meanings of the 15 verbs [...], and provide at least one example in English to illustrate as many grammatical constructions as possible in which each of the verbs could occur” (p. 686).

In the main test, each verb was accompanied by one of the ten entry types mentioned above. Subjects were requested to underline “the syntactic information which they considered helpful in answering multiple choice questions” (p. 683). All those responses in the pretest that indicated that “a given subject could have coped with a particular multiple choice question without recourse to the relevant dictionary entry” (p. 686) were eliminated from the analysis.

Dziemianko does not reveal the results of the multiple choice test.

Main results concerning subjects’ preferences:

- In both groups, examples were preferred.
- “Codes, with the exception of AFUN (i.e. functional codes in entries with analytical definitions) were the least helpful to the HSS. In the more proficient group, on the contrary, it is codes that proved to be the next most important” type of presentation (p. 686 f.); however, in three types of presentation of verb syntax in entries with contextual definitions the definition was preferred by the US.
- In both groups, “contextual definitions were underlined much more frequently than analytical ones” (p. 687).
- “[...] it is only when the dictionary featured contextual definitions and functional codes that the shift of the codes from the entry to the extra column significantly decreased the frequency of their consultation by the HSS as well as by the US” (*ibid*).
- “[F]ormal codes were [...] referred to significantly less often than functional ones” (p. 688).
- “[...] in all dictionaries but CPI [i.e. pattern illustrations in entries with contextual definitions] the higher degree of proficiency gave a tremendous boost to the consultation of codes [...]” (*ibid*).

### **Dziemianko (2008)<sup>183</sup>**

Like Dziemianko (2004, 2006), this paper reports a study of the user-friendliness of manners of presentation of grammatical information in recent English MLDs (CALD2, COBUILD5, LDOCE4, MEDAL2 and OALDCE7). The author was interested not only in verbs, but also in nouns, and she claims:

[...] the systems fall into two categories. On the one hand, there are formal verb codes and transparent noun codes, which prevail today in English pedagogical dictionaries, and, on the other – formal-functional verb codes and more opaque noun codes, which, present only in two dictionaries, cannot be said to be typical of MLDs. In the research reported below, the former codes are referred to as *mainstream* ones, and the latter are called *alternative*.

Dziemianko defines user-friendliness “as the frequency with which codes are consulted, provided that they are properly used”.

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<sup>183</sup> Since I read the paper as a Word document sent to me by the author, I cannot indicate page numbers.

In her study, she paid attention to “syntactic congruity between Polish and English lexical items (PL factor), the form of codes (mainstream vs. alternative), the part of speech (N vs. V) and the level of proficiency in English (intermediate vs. advanced)”.

In this specific study, the subjects were 603 native speakers of Polish; 338 of them were advanced students of English at Poznan University (= AS), and the other 265 were “mainly intermediate students attending (junior) high schools across the country” (= IS).

The test is described as follows:

It consisted of 12 Polish sentences accompanied by their partial English translations. To fill the gaps in the translations, subjects had to use specific English words in correct structures. For each such word, a dictionary entry was given. The English target items corresponded to Polish words underlined in the sentences.

Two basic versions of the test were prepared: one with 12 nouns as the target items, and the other with 12 verbs. For the noun test, 6 English uncountable nouns (which can be reclassified as countable ones) and 6 collective nouns were selected. In the verb test, all verbs were transitive; but 6 of them required complementation by an *-ing* clause, and the other 6 by a full infinitive. In each of the 4 groups of 6 English items, 3 items behaved syntactically like the underlined Polish words (PL+ items), while the other 3 had different grammatical properties (PL- items).

To prevent subjects from relying on their knowledge in the test, the English equivalents were replaced by [...] rare English lexical items [...].

Each entry offered two sources of syntactic information: examples and codes. There was always only one useful example and one useful code in an entry.

### Results:

- There was no significant influence of the “PL factor”.
- “[...] the AS’ consulted alternative codes significantly more often than mainstream ones in verb entries, but preferred mainstream noun codes to alternative ones. The IS also underlined alternative codes significantly more often than mainstream ones in verb entries, [...].”
- “Verbs stimulated the AS’ reference to alternative codes much more strongly than nouns, but nouns encouraged the subjects’ consultation of mainstream codes much more than verbs. The part of speech did not play an important role in the IS’ reference to codes.”
- “In general, the AS consulted both alternative and mainstream codes significantly more often than the IS.”

### Mieznikowski (2008)

In her master’s dissertation on usage notes, in which she also describes Howarth’s (1995) study, the author reports the following investigation on the use of such notes.

First, a comprehension test was administered to 118 Brazilian learners of English, *viz.*, 76 sixth-grade elementary school pupils and 42 students finishing their English major studies. They were asked to answer multiple-choice questions on eight usage notes taken from English-Portuguese BDs. Although the explanations in these BDs are given in the subjects’ native language, not all students answered all questions correctly. Between 55% and 81% chose the right answers. (The differences may, of course, be due to different levels of difficulty of the multiple-choice questions.)

Then another multiple-choice test was taken by 74 of the elementary school pupils. This time they were asked to choose the correct Portuguese translations of four English sentences, in each of which there was one problematic lexical item. Subjects were

requested to read the entry of that item. The entries contained usage notes. The author wanted to discover whether these young students read and understand the information provided in the BDs in their native language. Result: the correct translation of the four sentences was chosen by 26%, 59.5%, 52.7% and 45.9% of the 74 subjects, respectively. The author concludes that many students read only the first or, at most, the first and second equivalent, and that few read the usage notes (p. 72).

A similar test was administered to 38 fourth-year English majors. The same lexical items and dictionary entries were used, but the four sentences to be translated were different, one of them being a Portuguese sentence to be translated into English. Percentages of students who chose the correct translation: 57.9%, 57.9%, 63.2%, 84.2%. Mieznikowski concludes that these fourth-year English majors read the usage notes (p. 76), but she does not express any astonishment about the fact that not all of them – and in three cases not even two thirds – chose the right translation. Observe that they did not need to translate; and the BD entries, with the usage notes, were very clear, which shows the students' low level of proficiency.

### **5.1.2 The effects of specific dictionary features**

As in other chapters, the subjects in the studies summarized here did not necessarily consult real dictionaries. Frequently, only parts of dictionaries (e.g. definitions) were presented to them.

#### **Miller & Gildea (1984)**

The authors report two studies. The first one was described in chapter 3. Since the second one investigated specific dictionary components, namely definitions and examples, I summarize it here.

The subjects were three classes of 6th-grade (certainly American) pupils, whose number is not revealed.

They were asked to write sentences, in their L1, using ten 12th-grade words. The (supposedly unknown) meaning of these 10 words had to be discovered in one of “three kinds of instructional materials” which “were given to three different classrooms” (p. 22): a) a dictionary definition; b) a dictionary sentence (i.e. an illustrative example); c) a sentence taken from the New York Times.

The sentences written by the children “were rated by two judges as either acceptable [A], marginal [M], or unacceptable [U]” (*ibid*).

Results (in percentages):

	A	M	U
Definitions	36	33	31
Examples	55	22	23
Newspaper sentences	52	19	26

The authors conclude: “Sentences illustrating how the words were used were more helpful to children than were definitions. Even the New York Times sentences, which we feared might be more confusing than helpful, gave relatively good results.” However, they noticed as well that about 10% “of the acceptable sentences that were written after reading dictionary sentences or New Times sentences were acceptable because they were closely modelled after the illustrative examples” (p. 23).

### **Black (1986)**

[Maingay & Rundell (1987: 132-135); Nesi & Meara (1994: 2 f.); Nesi (2000: 18-20)]

This research report was not published. Maingay & Rundell explain that the author of the report – of “1985” – was Alison Black, and that the investigation was “conducted by the Longman ELT Dictionaries and Reference Department in collaboration with the Applied Psychology Unit of the Medical Research Council in Cambridge” (p. 132). Nesi & Meara cite as authors Black as well as Maingay & Rundell, but indicate the year 1987 (the year when Maingay & Rundell’s article was published). Contrarily, Nesi, who must have read the whole report since she provides so many details, gives the year as 1986. Reading Summers (1988), one notices that this Longman lexicographer reports the same study, mentioning that Black (who apparently was psychologist) collaborated. One item of information only provided by Nesi is the number of subjects. Please see Summers (1988), below.

### **Miller & Gildea (1987)**

[Nist & Olejnik (1995: 176); Dolezal & McCreary (1999: 83); Nesi (2000: 46)]

In Dolezal & McCreary’s brief summary, one gets the impression that this article reports the study described in Miller & Gildea (1984).

Also, Nist & Olejnik’s short description of Miller & Gildea (1987) seems to refer to the 1984 article; but then they mention a 1987 “*follow-up study*” in which “the researchers found that the subjects did better on a sentence generation task when they were given a model sentence than when they looked up the word in the dictionary, but that they often merely wrote something very similar to the model sentence”.

The researchers then provided three model sentences in the next study with the assumption that if one is good, three must be better. They found, however, that rather than using the information from all three sentences to create their own sentence, children merely keyed in on one sentence, failing to integrate all the information provided [...].

More or less the same information is given by Nesi, who quotes a passage of Miller & Gildea (1987: 90) in which the authors acknowledge that since many of the children’s sentences “were patterned on the models, this result could not be interpreted to mean that children learnt more about the meaning of a word from illustrative sentences than they learnt from definitions”.

### **Summers (1988)**

This article about dictionary use contains reports of three studies; one of them was cited in 2.1, another one in 2.2, and the third one – which had partially been reported by Black (1986) – is described here.

Summers does not reveal the number of subjects.<sup>184</sup> She remarks that the publishing house, Longman, wanted to discover the effectiveness of definitions and of examples because they were thinking of editing an MLD that would contain no definitions.

The researchers selected three texts. They were read by a group of students who indicated the words they would look up in a dictionary. From among these, 8 target words were chosen; and for each of these 8 words a multiple-choice test and three types of entries were worked out, “one consisting entirely of examples, another entirely of abstract definitions, the third type consisting of the normal abstract definition plus examples” (p. 119).

“The different entry types were typed onto index cards and mixed so that each student [obviously not those of the first group] received entries of all three types, in order to minimize the possibility of the different aptitudes of the students influencing the test results” (p. 120). Blank cards containing only the texts were also inserted into each student’s set of cards.

The multiple-choice test was taken twice: on the first occasion, the subjects could consult one of the three types of entries (or none, in the fourth case); on the second occasion, “an attempt to estimate the retention of information from the different dictionary presentations” (*ibid*), the students had no access to the entries. Summers does not inform the reader how much time elapsed between the two tests.

Results (in percentages of correct answers):

	Definitions only	Examples only	Definitions + Examples	Without consultation
First test	74	82	75	55
Retention test	67	67	64	48

Summers concludes:

- “[...] comprehension was substantially improved by using the dictionary entries.”
- “[...] there was no statistically significant difference between the success rates of the three different entry types” (p. 120). However, as can be seen, the “example only” entry was slightly more effective than the other two types.

Then a “third experiment tested the value of the three different approaches by getting the students to produce nine of the words in sentences”, i.e. to write sentences using these words.<sup>185</sup> It is not clear whether they could consult the entries again.

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<sup>184</sup> According to Nesi (2000: 18), in Black’s (1986) study – reported again in Summers (1988) – there were 16 subjects in the first “experiment” and 24 in the second. These two “experiments” are the two stages of the comprehension test. In Summers (*ibid*: 121), one piece of information makes it possible to calculate the number of subjects in the writing test: the students produced 360 sentences; since they had to use 9 different words, the 360 sentences must have been written by 40 subjects.

<sup>185</sup> This production test does not seem to have been described by Black (1986). Cf. Nesi (2000: 19f.).

The sentences “were marked by four separate judges for correctness”; they were allocated to one of four categories: O = correct and original; C = correct (the sentence was correct, “but too similar either to the definition they were given or to the comprehension text, or alternatively, not informative enough to indicate that [the students had] fully understood the word meaning” (p. 121); I = incorrect; N = no response (i.e. no sentence produced).

Results (in percentages):

	Definitions only	Examples only	Definitions + Examples	Without consultation
O	17	23	23	14
C	24	20	36	17
I	41	44	28	34
N	7	4	3	25

Summers concludes that for “production purposes [...] the mix of definition plus example would be seen as the most successful”, since it resulted in 36% of correct and only 28% of incorrect sentences.

The author admits “that aspects of the research were artificial”, and Nesi (2000: 19 f.) and Laufer (1993: 133) make several criticisms.

### Benson (1989)

The author deals with collocations, but since a specific dictionary was used in the study, his report is summarized in 5.2.2.

### Scott & Nagy (1989)

[McKeown (1991); Nist & Olejnik (1995: 179)]

The authors investigated how L1D definitions are interpreted.

In this study 4th and 6th graders were presented with definitions and then tested on three types of sentences, one that used the target word appropriately, one that was based on a fragment that was inconsistent with the full word meaning, and one that used the word incorrectly with no semantic overlap. Although students responded correctly to the appropriate and grossly inappropriate sentences about 80% of the time, they selected the fragment sentences as correct about half the time. (McKeown)

Scott & Nagy (1989) suggested that it is the structure of the definition that leads to misunderstandings. Their series of studies, which examined only verb forms (the words used were nonsense words), found that when subjects were given definitions and then were exposed to the words in sentences and had to tell whether the words were used correctly or incorrectly, students accepted incorrect sentences as correct about half the time. In a study in which the form of the definition was manipulated, there was no main effect for definition format; subjects still accepted fragments of definitions as representing the meaning of the words. (Nist & Olejnik)

### **Kostrzewska (1991)**

[Wingate 2002: 57 f.]

In this doctoral thesis, the author “compared the effectiveness of LDOCE and COBUILD explanations with explanations written by himself”. Note that in her summary, from which I quote, Wingate uses mostly the term *explanations* instead of the more common term *definitions*.<sup>186</sup>

The subjects were three groups of 8 or 9 “German university students with advanced proficiency in English”. Each of the groups had access to one of the three definition types. The students read four short texts containing fifteen target words. “After the reading, the subjects were asked to supply the L1 (German) equivalent.” Twenty minutes later, the test was repeated “in order to assess the retention of the target words”. Two days later, “the subjects were asked to retrospect and report which features in the explanations hindered or helped their understanding”.

The explanations, or definitions, written by Kostrzewska “contained more propositions and a larger number of redundancies than the definitions in both dictionaries”, and apparently the headword was inserted sometimes at the beginning and sometimes towards the end of the explanation.

Results:

- “Words with longer explanations [i.e. Kostrzewska’s self-written explanations] were better understood and retained.”
- “The positive effect of redundancies was confirmed by the subjects in the retrospective sessions [...].”
- “[...] if the unknown lexical item appeared towards the end of the explanation, the scores for understanding and retention were the highest.”

Wingate criticizes various aspects of this study: the small number of participants; the lack of information about the results of a proficiency test and about the method by which the subjects were assigned to the different groups; the extremely short time period between the two tests; the fact that the retrospection was delayed two days and was not tape-recorded.

### **McKeown (1991)**

After discussing the problems with dictionary definitions and indicating “principles for creating definitions that are maximally comprehensible for young learners” (p. 147), the author reports on an investigation into the effectiveness of two types of definitions: traditional ones (TDs), taken from L1 school dictionaries; and “revised” ones (RDs), i.e., definitions written according to the principles established by herself. The investigation consisted of two studies.

#### **First study**

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<sup>186</sup> In the case of general monolingual dictionaries, the term *definition* had been considered inadequate by Wiegand (1985a), who suggested the term (*lexicographic*) *explanation of meaning*.

The subjects were 24 (probably American) fifth-graders. They were presented with the definitions of 12 words (6 TDs and 6 RDs) and were asked to write one sentence with each word. “The sentences were scored either acceptable or unacceptable based on a judgment of whether the situation described by the sentence was appropriate for the meaning of the word.” (p. 150) “Nearly a third of the sentences were judged unscorable [...].” So there remained 218 sentences.

Result:

- The TDs yielded 75% unacceptable sentences, the RDs only 50%.

Although the RDs fared much better than the TDs, they led to only 50% acceptable sentences. Believing that the task was “not a particularly revealing one”, McKeown decided to carry out another study.

### Second study

Again there were 6 TDs and 6 DTs, but “[n]onwords replaced real words in this task in order to control for prior knowledge” (p. 150). The subjects were 60 fifth-graders. A “definition was read aloud to students as they followed along, and then students responded briefly in writing to two questions about the use of the word”. For example, in the case of *prudent* (which was substituted by “tordent”) the questions were “what is something that should be done in a prudent way?” and “when might you tell someone to be prudent?” The responses were scored “good”, “acceptable”, or “unacceptable”.

Result:

- The RDs “yielded a considerably higher proportion of good responses and considerably fewer unacceptable responses. An equivalent amount of responses was judged acceptable for both definition types” (p. 151).

McKeown concludes that the RDs – which focussed “on prototypical or characteristic use” (p. 154) – “helped students to understand the typical uses of the words and to avoid some of the pitfalls inherent in dictionary definitions” (p. 152).

### **Laufer (1992)**

The author wanted to investigate “the differences in effectiveness of two types of examples in comprehension and production of new words: a. examples taken from authentic language corpora and b. examples written by lexicographers for the particular entry” (p. 71). The subjects were tested on 20 (supposedly unknown) low-frequency target words.

The subjects were “two classes of altogether 57 adult EFL learners in the University of Haifa” who “were taking a course in English for Academic Purposes which emphasized reading skills” (p. 73).

Laufer carried out two studies (which she calls “*condition 1*” and “*condition 2*”). In both, the subjects were given a sheet with 10 target words and the respective authentic examples and another sheet with the remaining 10 target words and the respective lexicographer examples. “To avoid a situation where all the students would have the same

words illustrated by the same type of example, each half of the tests had different ten words illustrated by the same type of example” (p. 74).

In the first study, in which 26 students participated, the sheets contained nothing but the target words and the examples. The subjects were asked to translate the words into Hebrew, their L1. For each correct translation, they received 2 points; an approximate translation yielded 1 point, and an incorrect one 0 point.

Results of the first study (characterized as “examples only”):

- “The task of understanding the meaning of new words from the context of examples only was difficult, irrespective of whether the example was authentic or made up by a lexicographer.” The scores were very low.
- In the case of authentic examples, the mean score was 2.15 (out of the maximum of 20 points); it was 4.15 in the case of the other type. The difference was statistically significant. “This shows that the lexicographer’s examples provided better clues to the understanding of the new words than the authentic ones” (p. 74).

In the second study, in which 31 students participated, each sheet contained not only an example (authentic or taken from dictionaries), but also a definition. This time, both comprehension and production were tested. The comprehension test was the same as in the first study, while in the production test the subjects were asked to write a sentence using each of the 20 target words. The scores were attributed in the same way as before.

Results of the second study (“definition + example”):

- Comprehension:  
As stands to reason, the mean scores were far better than in the first study: 9.32 and 10.45, respectively. The difference was statistically significant. Again the lexicographer’s example was more effective.
- Production:  
The difference between the mean scores (7.36 vs. 8.36) was not significant, which means that type of example practically did not affect the subjects’ performance.

It became clear that, on the whole, the lexicographer’s examples were more effective than the authentic ones, and that examples together with definitions were more effective than examples alone.

These findings cannot be generalized, for several reasons: a) the number of subjects was quite small; b) some students (especially in the second study) may have known some of the words before the tests; c) there were only ten specific examples (of the two types); with other examples, the results might be different.

### **Laufer (1993)**

While Laufer (1992) had studied the effectiveness of authentic examples and of those written by lexicographers, she now investigated the effects of definitions and examples, without distinguishing the two types of examples.

The subjects were 43 Israeli first-year university students, not majoring in English, who were beginning to attend an EAP course.

A pretest with other students proved that the chosen 18 rare words were most probably unknown to the subjects.

The author prepared two versions of a test. In each, “9 words were defined only and the other 9 illustrated only” (i.e. illustrated by an example), and “in each version a different set of words was illustrated or defined” (p. 135). The two versions “were distributed randomly among students”; “each student was tested on words that were defined and words that were illustrated and each word was tested by definition only and by example only” (*ibid*).

In the first stage of the study, the subjects were asked to translate the words into their L1 (i.e. translation was the way of verifying comprehension) and to write a sentence with each one (= production). The scoring was the same as in Laufer (1992).

In the second stage, the students were allowed to read both definitions and examples for each word. “The subjects were asked to consider the additional information in the second test-version and to reconsider their initial translation of the 18 target words and the sentences with these words” (*ibid*).

In the two stages together “four conditions of using dictionary information” could be observed: “1. definition only, 2. example only, 3. definition + example, 4. example + definition” (p. 136). In condition (3), the subjects had seen first the definition and then, in the second stage, the example; in condition (4), the contrary occurred.

Results (in mean scores):

	Definition only	Example only	Definition + example	Example + definition
Comprehension	8.60	7.37	9.90	10.32
Production	6.65	6.39	8.04	8.13

- Having access to two types of information (definition and example), the subjects scored significantly higher than when relying on only one.
- In the comprehension test, definitions were significantly more effective than examples, while in production the difference was very small.

What was the effect of the addition of the two types of information? Laufer shows the “gain in scores after additional information”.

	Example added to definition	Definition added to example
Comprehension	1.34	2.93
Production	1.36	1.70

- The subjects scored higher when they read first the example and then the definition than vice-versa (i.e. the contribution of the definition was more important), but only in comprehension was the gain in performance statistically significant.

Laufer concludes (p. 140):

The average user benefits from a combined entry significantly better than from a partial one, both in the case of comprehension and production. Definition alone is more beneficial in comprehension, and is somewhat more helpful, though not significantly so, for production.

As in my summary of Laufer (1992), one might argue that with different examples and different definitions the results could be different. The results could be generalized only

if many more target words were tested and, preferably, with more and other types of subjects.

### **McKeown (1993)**

This article is mostly a new version of McKeown (1991). Curiously, the author does not mention her own 1991 paper.

In this new article, the reader receives some information which is lacking in the first version (for details, please see McKeown 1991), *viz.*, mainly the following:

a) 6 of the target words “were common to both tasks, and 6 words were unique to each task” (p. 24), which means that there were 18 target words on the whole (they are presented in a table);

b) in both tasks (or studies), the researcher judged the subjects’ sentences, but 25% “were scored by a second rater” in order to “determine reliability” (*ibid*);

c) the exact results of the second study were: 1) concerning traditional dictionaries (TDs): good answers (now called “distinct”) – 14%; acceptable (now “generic”) – 26%; unacceptable – 60%; 2) concerning revised dictionaries (RDs): good (“distinct”) answers – 41%; acceptable (“generic”) – 27%; unacceptable – 32%;

d) the RDs led to significantly more good (“distinct”) responses than the TDs; the same was true for good and acceptable responses together.

McKeown (1993) also informs us that she asked the subjects’ opinion, as well as that of the 10 teachers; and that 96% and 92% of their comments, respectively, were favorable to RDs.

### **Cumming, Cropp & Sussex (1994)**

Discussing the advantages of electronic lexical resources (in which, among other things, there is no problem of space, so the definitions can be longer than they are in most print dictionaries), the authors wanted to compare “a traditional, short phrasal definitional format and a full sentence format”, each of them “with and without the support of a usage example” (p. 369).

They selected 20 words, 10 adjectives and 10 verbs. “For each word, four sheets were prepared, one in each of the four experimental conditions” (p. 372), namely: a) traditional phrasal definition (PD), b) sentence definition (SD), c) PD + example (PD+E), d) SD + example (SD+E). Phrasal definitions (and also examples) were taken from LDOCE, and sentence definitions (and examples) from COBUILD.

The subjects were 85 “adult intermediate to advanced ESL students” (most probably in the US); “26 different mother tongues were represented” (p. 371).

Each subject was given sheets for 8 words, two in each of the four conditions.

“Each sheet was folded so that three areas, or panels, could be successively exposed [...].” On the first panel, there was only the target word, “and a 100 mm line on which the subject could mark its familiarity”. On the second panel, there was the target word together with the lexicographic information in one of the four conditions; the subjects were asked to indicate on a 100 mm line the degree of helpfulness of this information and write a sentence with the word. Opening the third panel, the students saw six sentences containing the target

word; three of them were correct, while in the other three the word was used incorrectly (“the error being of meaning in one sentence, of syntax in another, and of collocation in the third”).

After completing the eight sheets, the subjects were asked to rate the degree of helpfulness of the information in the four conditions, to indicate their preference, and to write further comments.

In the analysis, the sheets of 77 subjects were taken into account.

The researchers did various cross-tabulations (familiarity with the target word, subjects’ opinion of helpfulness, results of productive and receptive tasks, the four conditions), but I cannot go into detail here.

General results:

- The initial opinion of helpfulness was almost identical for the four conditions. After the task, opinions changed: definitions with examples were considered much more helpful than definitions alone, and SDs were considered much better than PDs.
- 71% of the 77 subjects preferred SD+E, 19% PD+E.
- Opinions about helpfulness are not reflected in the subjects’ performance, since there was “a striking lack of any differences between PD and SD, and between formats with and without a usage example, across the full range of production and comprehension measures used” (p. 375).

The authors admit certain limitations of their study, e.g. the small number of words and the fact that the target words were presented without any context.

### Nesi (1994)

The author aimed “to compare the speed and success with which subjects from different language and cultural background read and make productive use of learner’s dictionary entries” (p. 577). The study was carried out in their home countries. The subjects were “51 Portuguese undergraduates and 44 Malaysian undergraduates studying English at tertiary level in Faculties of Education” (p. 579); all of them “intended to become English teachers”. Nesi explains that “English and Portuguese are both Indo-European languages and share many cognate words”, while in Malaysia “the national language Bahasa Malaysia belongs to a completely different language family”; on the other hand, in that country “English is the second language” (p. 95).

The method employed in the main study was the same as Nesi & Meara’s (1994): the subjects were asked to write sentences with 18 relatively rare words combined with 18 high-frequency words. “Target words were paired with high-frequency words in order to prevent the subjects from merely reproducing example sentences from the dictionary entries. This method obliged subjects to create a new context to accommodate both words in the pairs.” (p. 579)

The look-ups were done on computer. “If the subject did not know the target word s/he could access a dictionary entry for that word by pressing ENTER on the keyboard.” (p. 579)

Main results (cf. Nesi 1994: 580):

- The Malaysians looked up more words than the Portuguese subjects (on average, 16 vs. 12.9 words), took longer to read the dictionary entries (31.75 vs. 24.66 seconds) and gained lower scores for the sentences they produced (3.09 vs. 3.52 ).

In chapter 4 of Nesi (2000), the same study is described, but it is called “pilot study” (p. 96), supposedly because the author, after summarizing it, made a “further analysis” (p. 99). She had noticed that the three “raters did not achieve a high degree of agreement and consistency” and their scores “also proved internally inconsistent”, “probably because they were not trained for the rating task”. Therefore she categorized the sentences systematically, establishing four categories, and she believes that these categories “describe the data more accurately because they were devised after closer examination of the sentences the subjects produced” (p. 97). I cannot go into detail here. In the end, Nesi concludes “that background does affect the success with which learners use dictionaries for productive tasks”; “it seems possible that the proximity of English to the mother tongue, culturally determined attitudes to task completion, and prior experience of dictionary use may all play a part in determining frequency, speed and success with which learners look up words” (p. 104).

### Nesi & Meara (1994)

The authors wanted to investigate the effectiveness of different types of definitions in writing sentences. The definitions were taken from OALD, LDOCE and COBUILD and shown on computer.

The method was the same as Nesi's (1994), i.e., subjects were asked to write sentences with 18 pairs of words (cf. Nesi 1994). The same words were used. “The computer program recorded whether the subject looked up the on-screen definition, and how long was spent reading it. It also recorded all sentences the subjects produced. In the analysis [...], we discarded all sentences that were produced without reference to their corresponding definition.” (p. 6)

After a pilot study with 18 students, 52 “non-native speaker adults, most of them studying on university English Language and Study Skills programmes” in Great Britain, took part in the main study. A vocabulary test showed that the “range of ability level was roughly the same” (p. 7).

“Each subject was assigned to one of three groups, with access to entries taken from only one of the three dictionaries.” (*ibid*)

The sentences were rated by three experienced EFL teachers, native speakers of English. The “judges found it extremely difficult to decide whether target word use was acceptable or not. [...] the judges felt that some of the sentences they marked as acceptable were written without real understanding of the target words” (*ibid*).

The unacceptable uses “were assigned to one of three categories: (1) failure to use the target Word (NTW); (2) semantic error (SEM); (3) usage error, e.g. an error involving transitivity, countability or morphology (USG)” (*ibid*).

Results:

- 56.5% of the 712 look-ups led to unacceptable sentences.
- Percentages of types of errors caused by types of definitions:

	NTW	SEM	USG
OALD	5.7	46.5	9.7
LDOCE	4.5	39.4	8.7
COBUILD	3.8	40.9	8.4

“There were no significant differences in error frequency across groups for categories NTW and USG, but the *OALD* group had a significantly higher number of category SEM errors [...], a difference which is presumably due to the special characteristics of the *OALD* defining style.” (p. 8)

“In the next stage of the analysis, the prevalence of kidrule in the data was investigated.” (p. 8)<sup>187</sup> Nesi & Meara show some examples of errors and estimate “that just under a quarter of all the errors in the data were a product of the kidrule strategy” (p. 9). After analyzing and categorizing other mistakes, they acknowledge in their conclusion that the conditions of dictionary use in their study were quite artificial. Nonetheless they think that the investigation “does provide some insight into the way learners interpret dictionary entries” (p. 14).

### Howarth (1995)

In this article on usage notes, the author also reports on a study of the use of such notes. I quote:

[...] I designed a test to be given to groups of adult learners [supposedly foreigners] at the University of Leeds English Language Unit, in the hope of isolating some positive effect. The advantage of examining students in this institution is that they are all given dictionaries (either OALD or LDOCE) at the beginning of their course and trained in their use, so there would be no problem of unfamiliarity. [...]

The research design was simple: two groups of 10 intermediate to advanced learners were given a set of questions based on the content of [ten usage notes]. The first time they saw the questions they answered them without assistance from any reference work. Their answers were then taken away and the same questions given again, this time with a copy of the relevant usage notes from OALD4.

As to the results, Howarth claims that “in spite of some instances where learners answered more correctly without the benefit of the usage notes than with, there was an overall improvement between the two attempts of nearly 30%”.

The author admits that one of the problems of his study was “to distinguish between the influence of the question, the usage note and the learner's competence in the final result” and that the “research design was too simple to provide a control for any one of these factors, so the results must be treated with caution and be regarded as indicative of an effect rather than as definite proof”.

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<sup>187</sup> Please see a description of the “kidrule” strategy in the summary of Miller & Gildea (1984), in chapter 3.

### Nist & Olejnik (1995)

The authors wanted to “examine the role that varying levels of context and dictionary definitions play in college students’ acquisition of new words, assessed under four different testing formats” (p. 179).

186 college freshmen of an American university “were randomly assigned to one of four conditions and given the directions to learn 10 new words using the context and dictionary definitions supplied”. “The four groups consisted of all combinations of weak and strong context (WC and SC) and inadequate and adequate dictionary definitions (ID and AD).” (p. 179) The number of students in each group varied between 43 and 49.

Since “it would have been virtually impossible to find 10 real words that all 186 subjects had not seen before”, nonsense words were used (e.g. *jadration* instead of *aberration*), but “the contexts and definitions were real or modifications of real words” (p. 179). The words were presented in four ways, i.e. occurring in a “strong” or a “weak” context or in an adequate or an inadequate definition. The authors explain and discuss each of these conditions. As mentioned above, four groups were formed, in each of which there was a different combination of conditions: WC + ID; WC + AD; SC + ID; SC + AD.

The students were allowed to study the words for twenty minutes, then they were given four tests: 1) a multiple-choice test; 2) subjects had to select the correct example; 3) they had to write a sentence with each word; 4) they had to select the correct word to complete each of ten sentences.

As to data analysis, the authors explain: “Data were analyzed using a 2 (context: weak/strong) x 2 (Dictionary definition: inadequate/adequate) x 10 (word) mixed model analysis of variance with word the within-subjects variable, and context and dictionary the between-subjects variables.” (p. 182) Then they present the percentages of correct responses for each word in each test and in each condition. In the discussion of results (p. 187), they summarize the findings as follows:

- “[...] the combination of strong context and adequate dictionary definitions together did not have a significantly greater effect on word knowledge than did the simple additive effects of context and dictionary.”
- “[...] context had only minor impact on subjects’ performance [...]”
- “[...] adequate definitions statistically influenced performance on vocabulary measures of varying difficulty, regardless of strength of context.”

The authors comment on the findings concerning dictionary definitions, claiming that “when students are confronted with definitions, it is the adequacy of these definitions that makes the difference for all types of vocabulary tests” (p. 188). As regards context, they remark: “[...] investigations that have compared weak context with strong context have found that context strength does make a difference. But the question of exactly how strong context needs to be in terms of the number of exposures and the number and types of cues remains fuzzy at best” (*ibid*).

### Nesi (1996)

As the title clearly indicates, the author studied the role of illustrative examples in productive dictionary use. She used the same method employed by Nesi (1994) and Nesi &

Meara (1994): The students had to write sentences using 18 infrequent words, each of which was combined with a common word. The 40 subjects, “non-native speakers studying English at the advanced level in Britain”, were allowed to consult entries taken from LDOCE. They were assigned to two groups, who received one of two different versions of the set of entries: in one version, the examples (existing in LDOCE) had been removed from the entries of the first nine target words; in the other version, the same had been done with the last 9 words.

The sentences produced by the students were judged *appropriate* or *inappropriate* by two independent raters.

Results:

- “Look-up time was slightly longer for dictionary entries with examples, but the difference did not prove significant [...]. The percentage of appropriate sentences produced with and without access to examples also proved non-significant [...]. There was no statistical evidence that subjects were more productively competent when they were provided with illustrative examples” (p. 201).

Nesi discusses “three possible explanations” for these results: the bad quality of the examples, the students’ incapacity to take advantage of the information provided in the examples, and deficiencies of her method.<sup>188</sup>

### **Martin-Rutledge (1997)**

This article, available on the internet, provides a short account of the study reported by Martin-Rutledge (1998).

### **Tono (1997)**

[Tono (2001: 174-188]

Like several of Tono’s other research reports, this one was republished, in a slightly modified version, in Tono (2001), where I got the information for my summary.

Tono wanted to investigate the effectiveness of devices called *signposts* (e.g. in LDOCE3) or *guidewords* (in CIDE). In LDOCE3, these are explained as follows: “words or short phrases that distinguish the meanings of longer entries, act as a visual index to help the user access the meaning they want as quickly as possible” (quoted from Tono 2001: 174). In order to simplify, I will use only the term *signpost*. The author also wanted to discover whether the items used as signposts are words that the users associate with the respective senses. He carried out two tests, in both of which the above-mentioned dictionaries were used.

#### First test

The subjects were 11 Japanese graduate students, about whom no further information is provided.

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<sup>188</sup> Humblé (1997 [2001: 49f.]) has “a critical look at the method used in this experiment”. Among other criticisms, he asserts: “Inadvertently[...], all of the 18 words are of Latin origin.”

Tono selected 25 headwords. Of each one he copied an illustrative example from both dictionaries. Since he aimed at investigating the effectiveness of signposts – which do not exist in all entries of the two dictionaries – he had chosen the 25 headwords in such a way that there were five combinations: a) LDOCE3 (–)<sup>189</sup>, CIDE (–); b) LDOCE3 (–), CIDE (+); c) LDOCE3 (+), CIDE (–); d) LDOCE3 (+), CIDE (+), short entry; e) LDOCE3 (+), CIDE (+), long entry.

“The subjects were asked to read the illustrative examples listed on the test sheet, to think about the meaning and then find exactly the same sentences under each headword in CIDE, or LDOCE3, as quickly as possible. The time taken for each example search was recorded.” (p. 182)

Results (concerning time spent in the searches):

- In case “a” – i.e. absence of signposts – the search time was practically the same in both dictionaries.
- In cases “b”, “c” and “d”, the LDOCE3 users took much less time.
- In case “e” (signposts in long entries), the search process in CIDE was much faster.

Some remarks should be made about the differences existing between the entries in the two dictionaries, but I cannot go into detail here.

In an attempt to find an explanation for the fact that the CIDE signposts seemed, in general, to be less efficient, Tono administered another test.

#### Second test

Forty-six Japanese undergraduate English majors participated. Their proficiency levels in English were considered “upper-intermediate”. They “were requested to write down whatever they associated with the given words” (p. 182), viz., *bridge, finish, period, serious*. Then the author verified, in LDOCE3 and CIDE, how many of the words or phrases written down by the subjects coincided with the various signposts provided in the two dictionaries. For example, in the case of *bridge*, many students wrote down “over a river”, which is exactly the signpost existing in LDOCE3.

Result:

- In general, there was much more coincidence between the words or phrases imagined by the subjects and the signposts in LDOCE3.

Tono thinks that CIDE uses more difficult words as signposts than LDOCE3.

#### **Bogaards (1998)**

The author wanted “to study the ways in which advanced learners of English as an L2 look for the particular piece of information they need in the body of longer entries in learner’s dictionaries”; more precisely, he intended to investigate the effectiveness of access structures in different MLDs.

Bogaards explains (p. 556):

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<sup>189</sup> The symbol “–” means that there is no signpost in the dictionary's entry.

LDOCE and CIDE exploit the semantic information: the *sign posts* and *menus* in LDOCE and the *guide words* in CIDE try to lead the users as fast as possible to the part of the entry which may serve them best. In COBUILD the most eye-catching element is the extra column, which mainly contains grammatical information. Except for some very long entries, OALD does not offer information of a special kind in order to guide the user.

Bogaards selected 20 polysemous high-frequency words. The words were familiar to the subjects, but not all of their senses. “For each of these words one less well known sense was selected.” (p. 557) The researcher made sure that this sense was unknown. For each word a context was created “which was conducive to the one particular sense of the word [...], but in such a way that it was practically impossible to guess the exact meaning”.

The subjects were “54 [Dutch] pre-university students [...] who had been taught English for about seven years” (p. 558).

They were given 20 sheets. On each sheet there were: one of the 20 target words inserted into a sentence, the translation of the sentence into Dutch, with a blank instead of the Dutch equivalent for the target word, and a copy of the respective entry taken from one of the MLDs.

Bogaards prepared four versions of the test. In each version, the words (i.e., the sheets) were put in different order, and the entries were taken from different MLDs. “Each subject was presented with four groups of five words in sentences [...]. Thus all subjects worked with five entries from each of the four dictionaries.” (p. 557 f.) The four versions were distributed randomly.

The students were asked to write down the time when they started to work on each sheet, to read the English sentence and its translation, to look up the unknown word in the entry, to underline the relevant information, to write down the time again, and to provide the Dutch translation for the target word.

Analyzing the sheets, Bogaards eliminated all cases in which a wrong piece of information had been underlined. In the remaining cases, the translation of the target words “was classified as ‘correct,’ ‘nearly correct’ or ‘incorrect’” (p. 558).

The author counted the number of lines of each entry in the four dictionaries and the number of lines between the beginning of the entry and the beginning of the relevant information about the right sense. In the following table, I present the data, together with the time taken by the subjects to complete the task.

	Average number of lines in the entries of target words	Average number of lines up to the relevant information	
CIDE	69.9	53.0	44.79
COBUILD	73.5	36.3	50.50
LDOCE	69.2	33.6	42.30
OALD	62.0	22.8	52.42

In his analysis, Bogaards noticed that “Place and Length had rather low, non-significant correlations with the dependent variable Time” (p. 560).

Taking into account the variables “time” and “finding/location of information”, Bogaards concludes (p. 560):

LDOCE and CIDE, which both have access structures which are based on semantic principles, give the best results: students find the information they are looking for more often and they need less time to find it. The one dictionary without any clear guiding principles, OALD, has the least success: students more often do not find what they are looking for and they need more time (24% more than for LDOCE, 17% more than for CIDE), even though there is less text to scan and even though the number of lines to read before the relevant information is reached is much lower than in the other dictionaries. Cobuild, which has a system which is mainly based on grammatical features, is in between these two extremes: it has nearly the same success rate as LDOCE as far as location of the right information is concerned but the use of Cobuild takes about 19% more time than LDOCE and about 13% more than CIDE. In addition, Cobuild seems to give less clear descriptions of the meanings involved than each of the other dictionaries.

Results concerning correctness of word translations (in percentages of valid look-ups):

	Incorrect	Nearly correct	Correct	No translation
CIDE	7	14	71	8
COBUILD	8	21	61	10
LDOCE	8	17	70	5
OALD	8	18	69	5

Bogaards did not analyze these results statistically. As can be seen, there are very few differences. Only COBUILD led to clearly less correct translations, but on the other hand it caused the largest number of nearly correct translations. Adding correct and nearly correct translations and subtracting the cases in which no translation was provided, the percentages are: CIDE – 77%; COBUILD – 72%; LDOCE – 82%; OALD – 82%.

As was said in the last paragraph of the summary of Bogaards (2002) in 4.1, the use of translation is problematic in investigations in which MDs are consulted. However, this drawback was diminished by the fact that in this study all subjects worked with five entries from each of the four dictionaries.

### Mackintosh (1998)

Please see the general information on this article in chapter 3.

Since a first study had indicated that the subjects, students of a Translation Course in Canada, preferred to read definitions in their L1, Mackintosh wanted to investigate the difficulties caused by definitions written in the FL.

This time, 106 students of the same course participated. They were 65 native speakers of French and 41 native speakers of English.

They received sheets on which there were 8 isolated FL sentences (called “contexts” by the author). Each sentence contained a nonsense (i.e. made-up) word. Beneath the sentence, there was the definition of the corresponding real word. The definitions were taken from an MD of each of the two FLs (*Webster's Ninth New Collegiate Dictionary* for English and *Petit Robert* for French). For half of the 8 target words, English definitions were provided, and for the other half, French definitions. For each of the two native speaker groups, five versions of the test were prepared, with different sentences and definitions in each.

The task was to write down the equivalent or an L1 explanation of the target word. The students were also asked to underline the lexical items in the definition which they did not understand. The sentences did not offer any contextual clues. The definitions of the target words were of similar complexity.

Results:

- Correct answers (i.e. correct translation or appropriate L1 explanation):
  - after reading definitions in the L1: Anglophones – 59.1%; Francophones – 52.3%;
  - after reading definitions in the FL: Anglophones – 32.3%; Francophones – 48.1%.
- Mean number of lexical items not understood in each of the definitions:
  - in the L1: Anglophones – 0.55; Francophones – 0.75;
  - in the FL: Anglophones – 1.71; Francophones – 0.94.

Mackintosh points to the problem mentioned in the last paragraph of my summary of Bogaards (2002), in 4.1: “We realized that the inability to produce an equivalent did not always stem from the lack of comprehension. Sometimes it was purely a production problem, whereby the subjects could not think of the desired equivalent, even if they were familiar with the concept” (p. 136). The author summarizes the results as follows: “[...] it would seem that in general, complex definitional metalanguage had a negative effect on the subjects’ ability to understand definitions, and that the subjects, especially the Anglophones, found the L2 definitional metalanguage more complex than L1 definitional metalanguage. [...] And the number of unknown items was inevitably higher in L2.” (ibid)

### **Martin-Rutledge (1998)**

Discussing the topic *dictionary examples*, the author states that “the term *example* does not have a standardized definition” (p. 7). In her opinion, examples may be free combinations, collocations, fixed expressions or compounds.

After presenting a survey of research on dictionary use, she reports on her own her study, in which she wanted to answer the following questions:

Do students reference examples to find or confirm a translation equivalent? Does referencing an example result in a correct or incorrect translation equivalent? Do students locate the example most applicable to the source language (SL) item when searching for an equivalent? What is the result of referencing an applicable example versus a non-applicable example? (p. 3)

After a pre-test and a pilot test, 90 Canadian translation students took the main test. “Of the 48 Francophones, 43 consider[ed] themselves bilingual, while all 42 of the Anglophones consider[ed] themselves bilingual” (p. 62).

The test is described as follows:

The test comprise[ed] a French text on the left side of the test booklet and the corresponding English translation on the right side. [There were] 29 lexical items in the French text that correspond[ed] with blanks in the English text. In other words, the test [was] a kind of bilingual cloze test. (p. 45 f.)

There was also a dictionary booklet containing bilingual entries of the 29 target items. Subjects were asked to tell whether they had consulted the BD to translate these items and were requested to underline the part of the entry that had been helpful.

The translations – which were L1-L2 translations for the Francophones and L2-L1 translations for the Anglophones – were considered correct, partially correct or incorrect.

The dictionary examples “were assigned a status of right, close or wrong” (p. 70). For the author, a right example resembles the source text context and its target language equivalent “works” in the target text context.

Participants consulted 100 of the 546 examples contained in the entries.

The statistical procedures are described in detail.

In chapter 4 of her dissertation, Martin-Rutledge shows in great detail and comments on the translation of the target items, the consultation of examples, and the differences between Anglophones and Francophones. She also presents many other findings (e.g. about length and position of examples in the entries). She claims that “[f]airly clear cut answers were obtained for the general questions, while the results for the specific questions were less conclusive” (p. 132).

General results (p. 133 ff.):

- “Users consulted both simple and fixed complex lexical items in the bilingual dictionary entries provided for the translation test. Simple lexical items were consulted more frequently if they were less familiar to users.”
- “Participants who use the dictionary entry for unfamiliar simple items or fixed complex items often provided correct equivalents, unless the dictionary entry did not provide information that was applicable to the test context. On the other hand, participants who did use the dictionary entry for familiar simple items also often provided correct equivalents.”
- “Users found it unnecessary to consult examples for simple lexical items, while fixed complex items prompted the most example use. And users were normally able to produce correct equivalents upon consulting an example for a fixed item, unless the equivalent provided in the example for the fixed item was not appropriate for the test context.”
- “Overall, the participants doing *thème* [i.e. L1-L2 translation] (Francophones) gave more correct equivalents than those doing *version* [L2-L1 translation] (Anglophones) when using examples. This was also the case even when only other information was used instead of examples. This seems unusual since it is generally assumed that translation toward the native language produces a better target text. There may be two explanations for this finding. First, students doing *thème* translation tend to be more meticulous about dictionary consultation. Second, the cloze text nature of the test required only lexical and semantic skills, whereas a full translation requires not only these skills, but also syntactic, grammatical and textual skills. If a full translation had been required, results may well have been different, [...].”

### Nesi (1998)

The author wanted to investigate the effectiveness of entries of several dictionaries. She chose the MLDs OALD5, LDOCE3, COBUILD2 and CIDE, as well as an L1D of similar size (*Concise Oxford Dictionary – COD*), and selected five English lexical items as target words: *colander*, *insole*, *plunger*, *shoehorn*, *spout*. Nesi explains that they are “grammatically regular” and “collocationally unrestricted”, that “subjects were familiar with the objects they denoted”, while the majority did not know the words, and that “the objects they denote are easy to recognise in picture form” (p. 160).

“Three measures were used to judge the accessibility of the entries: the number of passive sentences they contained, their readability according to a standard readability formula, and their lexical density.” (p. 161).

The researcher prepared five test versions. In each version, the entries for the five words were taken from a different dictionary.

On sheets of paper, which were “folded in half to form a four-sided leaflet”, the subjects were asked to do the following on the four pages: (1) rate their level of familiarity with each of the target words; (2) rate the helpfulness of each entry (which, on the second page, was provided for each word); (3) produce one sentence with each of the words; and (4) “identify the five objects denoted by the headwords from a choice of twelve illustrations” (p. 163).

The subjects were 101 “undergraduates studying at an English-medium university in Botswana”, 19 “Japanese undergraduates studying at Warwick University”, and 38 “British-based adult English language students from a variety of language backgrounds” (*ibid*).

Their sentences were judged “right”, “wrong” or “ambiguous”. In the analysis, it was noticed that “85.8% of all ambiguous sentences were followed by correct answers in the identification task” (p. 164), which means that the subjects had understood the definition.

For the production task and the identification task, Nesi calculated the expected scores.

Seven hundred twenty leaflets (i.e. 158 subjects x 5 words) were analyzed.

#### Main results:

- Subjects’ rating of helpfulness of the dictionary entries (on a scale from 1 to 5): CIDE and LDOCE – 3.13; COBUILD – 3.11; OALD – 2.92; COD – 2.17. The statistical analysis showed that the difference between the first two dictionaries and the last one was significant.
- In the production task and the identification task, there was no significant difference between the expected and the obtained scores. However, the CIDE entries led to much better results than expected.
- When only those cases were taken into account in which subjects had indicated low familiarity with the target words, the percentages of correct answers in both the production and the identification task were the following: CIDE and LDOCE – 41.8%; OALD – 39.6%; COBUILD – 36.7%; COD – 28.6%. “These results suggest that LDOCE and CIDE entries were slightly more effective than the others, while COD entries were the least effective” (p. 169).

In a comparison of the two “best” dictionaries, it should be added that, since in two CIDE entries there was an illustrative example which may have contributed to the effectiveness, the LDOCE definitions may have been slightly better than the CIDE definitions. On the other hand, with CIDE entries the students obtained many fewer zero scores than with the entries in the four other dictionaries (cf. p. 170).

Nesi acknowledges that, due to several limitations, such as the use of only five words, her study “cannot make far-reaching claims regarding the usefulness of the current learners’ dictionaries” (p. 172).

#### **Nesi (1999a)**

This study “was designed to investigate the value of grammatical information (as opposed to information about meaning, collocation and register) in entries for a new primary level learners’ dictionary”.

Twelve target words were divided into two groups of 6. In each group, there was one noun, one irregular noun, two irregular verbs, one “regular and irregular verb” (*smell / lean*), and one gradable adjective (*fierce / smooth*).

For each of these words, six versions of a dictionary entry were prepared. They differed in the amount and mode of presentation of grammatical information. This information was restricted to the indication of word class (abbreviated or not) and the presentation of inflected forms (provided or not provided), but “the main part of the dictionary entry also contained a certain amount of grammatical information”; e.g., all entries “provided covert word class information”. “Therefore the additional word form and word class information included in the entries for some words in each test condition tended to have a reinforcing role.” Since there were two groups of words and six entry versions for each, there were 12 versions overall. These were printed on leaflets, which also contained three sentences (one or two correct and two or one incorrect) with each of the 6 target words.

The subjects were 1,500 children from five African countries and from Jordan. With a mean age of 11.3, they were “studying in grades five and six of English medium primary schools”. They were “tested in their own classrooms, under examination conditions”.

The pupils were asked: (a) to rate their familiarity with the six target words on a scale from one to five; (b) to rate the helpfulness of each dictionary entry, again on a scale from one to five; and (c) “to mark as right or wrong three sentences for each of the six word categories”.

#### Main results:

- “A slight preference was indicated for low levels of information (no forms, and abbreviated or no word class), but there was no significant difference in the perceived helpfulness of entries in the six conditions.”
- “The best results were for words provided with forms in full, but no word class information. The worst results, predictably, were for words provided with no grammatical information at all (no word class, no forms).”

After a detailed analysis of the results, Nesi concludes that her study “confirmed the hypothesis that the children would achieve higher scores on grammar recognition tasks when provided with higher levels of grammatical information”, but she also admits that “the interpretation of some responses is not entirely clear, and the experiment did not completely resolve the question of what to include and what to leave out of a dictionary entry”.

#### Bogaards & Van der Kloot (2001)

After showing how grammatical information is presented in four English MLDs, the authors report on a study in which they compared “the usefulness of the grammatical information that learners’ dictionaries of English provide about verb structures, especially about verb complementation” (p. 105). They distinguished “findability” and “usability” of information. Of the four MLDs mentioned, only LDOCE3, COBUILD2 and CIDE were used in the study. Among verbs, they selected “high frequency verbs in lesser-known constructions”. After pilot tests, an initial list of 35 verbs was reduced to 12.

The subjects were 88 Dutch students, *viz.*, 59 high school students who had been taught English for at least seven years and 29 university students majoring in English.

They received “a booklet consisting of fourteen pages”. In the first one there was an example, and the last one “contained some general questions” (about age etc.). In each of the remaining twelve pages: (a) subjects were asked to note the time they began and ended the task; (b) there was a Dutch sentence, an English translation in which the verb and its complement were lacking, the respective verb, and its dictionary entry taken from one of the three MLDs; (c) students were requested to complete the translation, looking for the information needed and marking it.

Since three sets of four verbs had been formed (S1, S2, S3), and in each group the entries had been taken from a different dictionary (D1, D2, D3), there were six versions of the booklets: {S1D1, S2D2, S3D3}, {S2D1, S3D2, S1D3}, {S3D1, S1D2, S2D3}, {S2D1, S1D2, S3D3}, {S3D1, S2D2, S1D1}, {S1D1, S3D2, C2D2}. The six versions “were randomly distributed among the subjects”.

The results are presented in several tables and figures. Bogaards & Van der Kloot conclude (p. 117 f.):

- “[...] some verbs are more difficult to look up than others and [...] these differences are to some extent amplified by the particular dictionary that is used. [...] these differences are not consistent among the two groups of students.”
- “[...] no clear-cut evidence was found regarding overall differences between the dictionaries.”
- “Whereas the log-linear analyses of relevance and correctness did not yield significant effects for the university students, an (almost) significant effect of dictionaries on relevance and a nominally significant effect on correctness was found for the secondary-school students. Both as regards relevance and correctness, CIDE appeared to perform less well than Cobuild and LDOCE.”
- The high school students needed much more time to find the relevant information and found it less often than the university students.
- There was no clear evidence that the mode of presentation of grammatical information in one of the three MLDs “serve[s] the learner better than the others”.

### Ślotała (2001)<sup>190</sup> [Dziemianko & Lew (2006a)]

Dziemianko & Lew describe this study as follows:

Ślotała (2001) compares learners’ dictionaries with non-lexicographic publications (books and journals) in terms of their effectiveness in helping Polish learners of English to locate cultural information. Access to cultural information is found to be both faster and more accurate in the dictionary group, even though, according to questionnaire responses by the same subjects, dictionaries occupy a distant position in the ranking of sources of cultural information. It must be pointed out though that the nature of the tasks prioritized detailed, specific information, which might have privileged dictionaries due to their efficient indexical access structure. One might question whether the advantage would still hold for tasks of a more exploratory nature.

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<sup>190</sup> Bibliographic data according to Dziemianko & Lew: Ślotała, Blanka. 2001. The dictionary as a source of cultural knowledge in teaching English as a foreign language to Polish students. M.A. diss., Adam Mickiewicz University.

## Bogaards & Van der Kloot (2002)

Since, in the authors' opinion, the findings of their 2001 study were inconclusive, they wanted to examine the same issue (cf. Bogaards & Van der Kloot 2001 above), but excluding aspects of findability. Therefore, subjects would not need to search for grammatical information in whole entries. For each verb, they were shown only the information about one sense. The information about verb constructions "was standardized so as to permit systematic manipulation" (p. 748).

The authors distinguish four different ways in which this information is given in recent editions of English MLDs: 1) grammatical codes, like "V n" or "V prep n" (in COBUILD2's extra column); 2) a more explicit way, as in "*to be charged with*" or "*to reward sb with sth*" (LDOCE3); 3) implicit information in the definition (in COBUILD2 and, less systematically, in CIDE); 4) implicit information to be found in the examples.

Bogaards & Van der Kloot used the same 12 verbs as in their prior study, i.e. "frequent verbs in rather unfamiliar constructions" (p. 749). For each relevant sense, an entry was prepared in which the verb "was presented with a specific combination of types of information, but each verb had in all cases the same two examples". The combinations were: (a) definitions + codes + examples; (b) definition + explicit information + examples; (c) definition only + examples; (d) explicit information only + examples.

The subjects were three groups of Dutch students: "33 secondary-school students who had taken English courses during at least six years"; "56 first year university students of English", who had learnt English for at least eight years; and "28 third year university students of French or Spanish". "This latter group was included because their level in English is comparable to that of the second group, but as students of other languages they may be taken to be more familiar with several types of coded information" (p. 750).

The participants received a booklet consisting of four pages. On the first one, the procedure was explained, an example was given, and the students were asked to write down certain personal information. On each of the remaining pages, there were the entries for one sense of four different verbs; on each page the way of presenting the grammatical information was the same, but it differed between the three pages. Two versions of the test had been prepared. In one version, the combination of information on the three pages was "a", "b", "c", and in the other one, "b", "d", "c". The authors do not explain how the two versions were distributed.

As in the 2001 study, there was a Dutch sentence and its English translation (in which the verb was missing). The subjects had to consult the entry, underline the part in which they found the needed information and complete the English sentence. For example, the sentence "He ... now ... officially ... theft" had to be completed with "was ... charged ... with".

The results for each group of subjects and each version are shown in two tables and two figures and are interpreted by the authors.

General results:

- Very seldom did subjects make use of combination "a". Of all types of information, examples were underlined most. The highest "percentages of the total number of cases in which the [...] category was possible" (p. 751) were examples – 40.7; explicit information – 34.9; explicit information + examples – 21.7; definition – 20.6; definition + example – 16.0.
- On average, university students obtained higher scores than secondary school students.

- As to the effectiveness of different ways of presenting grammatical information – as perceived in the scores obtained in the task (which the authors call “translation”, but which was only the completing of sentences) – there were no significant differences. The scores varied between 79.6% and 100%. “The differences that are present [...] probably must be explained by differences among the items used as stimulus material.” (p. 755)

In their conclusion, Bogaards & Van der Kloot remark: “It seems as if users intuitively know how to gather the information that suits them best. Once they have found the information, they manage to use it correctly in most of the cases.” (p. 756)

### McCreary (2002)

The author wanted to compare the effectiveness of two types of definitions, *viz.* traditional ones and those commonly to be found in MLDs (i.e. employing a controlled corpus-based vocabulary or even being made up of complete sentences, as in COBUILD). He claims that his study was “a replication of work in reading comprehension research conducted by McKeown (1993) [...]” (p. 181). More precisely, he intended to find out whether the use of MLDs “by native English speaking Americans is beneficial” (p. 188).

After several pre-tests, 20 “hard” (i.e. uncommon or difficult) words were chosen, with which the participants were to write sentences.

The subjects were 207 American university freshmen “drawn from several first year English classes” (p. 186). They were allowed to consult dictionary entries copied from three dictionaries: *The American Heritage Dictionary* (with traditional definitions) or one of the two MLDs COBUILD and LDOCE.

Four different “dictionary packets”, with the entries of the 20 target words, were prepared.

For each packet, half of the definitions came from the *American Heritage Dictionary* and half came from either COBUILD or LDOCE. The first packet consisted of the first ten definitions, in alphabetical order, from the *American Heritage* [...] and the second ten definitions from COBUILD [...]. The second packet was the reverse of the first, [...]. The third and fourth packets were similar to the two above, except that the *American Heritage* definitions were matched with the LDOCE definitions instead of COBUILD definitions (p. 185).

Approximately 25% of the subjects were randomly assigned to each of the four different dictionary conditions.

Their sentences were “scored acceptable, unacceptable, or ambiguous by the experimenter and a research assistant” (p. 188).

As a matter of fact, the study evaluated more than just definition styles, since the entries of the two MLDs, contrary to those of the L1D, contained examples as well.

The author shows the data concerning all 20 target words and claims that a “statistically significant result favoring the two [MLDs] at the  $p<.001$  level was found between the test scores [...], indicating that advanced [MLD] use by native English speaking Americans is beneficial” (p. 188). The exact percentages of acceptable sentences were: COBUILD – 44.95; LDOCE – 43.56; *The American Heritage Dictionary* – 33.57.

In the discussion section, McCreary deals with dictionary use strategies and asserts that his study “reconfirmed two strategies for the American 18 and 19 year-old university students, the ‘kidrule,’ and ‘choose the first definition’” (p. 193).

**Purczyńska (2002)<sup>191</sup>**  
[Dziemianko & Lew (2006a):]

Dziemianko & Lew provide the following summary of this study:

In a study devoted to the role of examples in the bilingual dictionary, Purczyńska (2002) administered a test and a questionnaire to 15 students at a public junior high school ('gimnazjum'). Using a careful randomized design with statistical evaluation, Purczyńska tests the influence of dictionary examples on the students' choice of grammatical tense, but finds no evidence of any significant effect.

**Wingate (2002)**

Having noticed, in the second of her studies described in 4.1, that the definitions of the German MLD *Langenscheidt Großwörterbuch Deutsch als Fremdsprache* (LGDaF) were difficult for intermediate learners, the author suggested a new type of definition (ND), which "follow[s] the model of the COBUILD [full-sentence] definitions as closely as possible" (p. 130). Then she investigated whether this type is better for intermediate learners and which characteristics make the definitions more effective. This was done in two further studies.

The second study with oral protocol

The same texts and tests as in the two previous studies were used (cf. 4.1). However, this time, not two but three "dictionaries" or "definitions" were compared: a BD, the LGDaF (with traditional definitions) and entries with the definitions suggested by the author (NDs).

Thirteen Chinese students who were studying German at a university in Hong Kong were assigned to two groups according to their proficiency in German, and in each group they were assigned to one of three dictionary type groups. Only the BD group (included in the study just for triangulation) used a real dictionary, while the students in the other two groups were presented only with entries (taken from LGDaF or worked out by the author). I will call these groups G1, G2 and G3, respectively.

Wingate selected 61 target words. She adopted the same procedure and the same precautions as in the first TAP study. In the analysis, she included the four students who had made the first oral protocol (cf. 4.1), so that the data on 17 subjects were taken into account.

Results (p. 145 ff.):

- Successful look-ups (i.e. the word was understood): G1 – 48.48% (of 127 consultations); G1 – 40.27% (of 124 consultations); G3 – 57.87% (of 133 consultations).
- Reading comprehension test scores in percentages:
  - First text: G1 – 27.3%; G2 – 23.39%; G3 – 14.41%.
  - Second text: G1 – 38.85%; G2 – 36.66%; G3 – 34.75%.

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<sup>191</sup> Bibliographic data according to Dziemianko & Lew: Purczyńska, Ewa. 2002. Examples in the bilingual dictionary: An empirical study. M.A. diss., Adam Mickiewicz University.

- Vocabulary test scores (out of 23 points possible):
  - Vocabulary test 1: G1 – 5.4; G2 – 4.16; G3 – 3.83.
  - Vocabulary test 2: G1 – 8.6; G2 – 8; G3 – 9.

Wingate comments that the students in G3 “had by far the highest success rate in understanding the words they looked up”, but she recognizes that “the sample size of five or six subjects per group is too small to prove statistically that the differences are significant”. As to the tests, she concludes that “none of the three groups achieved consistent results in all the measures and therefore it cannot be determined which group had the overall best or worst results” (p. 146).

Based on the TAPs of groups 2 and 3, Wingate verified how the students reacted to the two types of definitions. She shows not only the problems subjects encountered, especially in the LGDaF definitions, but also errors in their look-up strategies (p. 178-181).

The most common strategy mistakes were: a) the use of the “kidrule” strategy (which is explained in the summary of Miller & Gildea 1984 in chapter 3), causing 23% of unsuccessful look-ups; b) the reading of only part of the entry; c) the fact that subjects did not know where to look up compounds, idioms or inflected forms.

Then Wingate comments on the problems of the LGDaF definitions, which are the same as in traditional MDs. For example, “the text is often extremely condensed” (p. 171).

Since only 6 students had looked up one of the definition types, the researcher decided to do another study.

#### The “second experiment”

The subjects were 86 intermediate learners of German, attending an intensive course in Shanghai. They had received 470 hours of instruction.

This time the reading texts, entries and tests were not available on computer, but printed on leaflets. Only the reading texts were the same as in the previous studies.

Wingate wanted to find out which definition type, the traditional LGDaF one or the full-sentence one (ND), leads to better word comprehension. The tasks were: a) mark the known items in a list of 92 words; b) read the two texts; c) provide L1 (Chinese) equivalents or paraphrases for 21 (polysemous) target words and indicate whether the respective entry had been consulted, and d) mark “true” or “false” in a comprehension test. Although reading comprehension “was not under investigation”, the test was considered necessary “to ensure that the subjects indeed read the texts” (p. 87). Since most students marked three of the target words as known, these were eliminated from analysis, which is therefore based on 18 words.

Forty-four of the 86 subjects were presented with LGDaF entries, and 42 consulted ND entries. The data on two students of the first group, selected at random, were not taken into account. In each group (of 42 students), half were considered of high and of half of low verbal ability (p. 198).

The answers in the comprehension test were rated “correct” (1 point), “incorrect” (0 points) or “partially correct” (0.5 point). “The test was first scored by a Chinese teacher of German. [...] in all cases of partially right answers, a second judge was asked to assess the answer [...]. The second judge also assessed a random selection of thirty tests. The interrater reliability was .91” (p. 90 f.).

Results:

- Mean scores: LGDaF group – 4.37; ND group – 5.95.
- Mean scores in different ability groups:
  - high verbal ability: LGDaF group – 5.48; ND group – 8.45;
  - low verbal ability: LGDaF group – 3.26; ND group – 3.45.

In the high verbal ability group, but not in the other group, the NDs (full-sentence definitions) were significantly more effective for word comprehension than the traditional LGDaF definitions.

After detailed analyses, Wingate remarks that “the effectiveness of full-sentence explanations remains a hypothesis” and that there is “reason to assume that the defining vocabulary is the determining factor in the understanding of the definitions, while complex syntactic structures do not affect understanding” (p. 217). She admits that due to the limited number of target words and other drawbacks of the investigation, “the conclusions drawn from this research context have to be verified by further research” (*ibid*). Nevertheless she recommends that in definitions for intermediate learners “a restricted defining vocabulary should be used” and “redundancies and examples should be integrated” (p. 218).

### **Dziemianko (2006)**

In this book, originally a doctoral thesis, the author deals in much more detail with the study already reported in Dziemianko (2004). Please see the basic information in the summary of that paper in 5.1.1.

As to the main test, the author explains:

Intended to make it possible to examine the recognition of syntactic information on verbs in pedagogical dictionaries by learners of English and investigate the actual utility of the information found, the test consisted of 15 multiple choice questions with a pertinent dictionary entry below each one. The entries were for the selected verbs, which were used also in the multiple choice task. Even though some of the verbs are polysemous, the entries covered only the senses in which they occurred in the task. [...] Syntactic information helpful in choosing correct answers was to be identified and marked in the entries (p. 46).

In his review of the book, McCreary (2007), although criticizing the fact that some parts of this thesis on user-friendliness are not user-friendly and that there are “some weaknesses in readability and clarity” (p. 192), holds that “this monograph is a worthwhile addition to any library of lexicographic research” (*ibid*) and that it “highlights the value of MLD’s for all students of ESL; thus it should be of interest to all applied linguists” (p. 189).

Here are some more of McCreary’s statements:

[...] the author tried to find out everything about how both high school and university students use syntactic information in entries, including their writing skills with ‘hard words’ on a pretest, number of years of study of ESL, gender differences in both high school and university students, their perceptions about what they find useful in entries, their opinions about the back matter (with the syntactic codes), a multiple choice test to empirically determine their comprehension, and 46 (yes, forty-six!) other factors regarding lookup behaviour and comprehension (p. 190).

As to results, McCreary asserts:

Some of the results from the fifty two tables and twenty nine figures are that examples tend to be preferred by both high school and college students, but college students looked at examples a little less often when reading modern day contextual definitions in dictionaries like COBUILD. College students also tended to rely on pattern illustrations in dictionaries, such as LDOCE and MEDAL (*ibid*).

It is impossible here to show all the numerous detailed findings of the study. In her concluding remarks, Dziemianko herself makes the following statements:

[...] as predicted, it is examples that were underlined most frequently. In fact, the only exception to the otherwise unquestionable preference for this source of verb syntax has been identified in the more advanced group, where pattern illustrations, if present, were consulted more often. It is also worthy of note that, although pattern illustrations often turned out to be more user-friendly than their encoded counterparts, the frequency with which they were referred to substantially increased with the level of proficiency (p. 185).

In her discussion of the results, in which she compares them with those of other studies and with the opinions of certain metalexicographers, she comments:

The study shows, then, that as far as syntactic information is concerned, a user-friendly verb entry should contain examples, a contextual definition and functional codes interspersed among examples (p. 188).

### **Dziemianko & Lew (2006)**

Please see Lew & Dziemianko (2006a), where the same study is reported.

### **Lew & Dziemianko (2006)**

The two Polish authors assert that a “new type of definition of abstract noun headwords, the single-clause *when*-definition, has recently found its way into major English monolingual learners’ dictionaries” and that it “seems to be modeled after (English) folk defining”. One of the examples provided is the definition of *hatred*: “when you dislike someone or something very much”.

The aim of their investigation was to find out whether this new type allows users to recognize the part of speech of the headword.

The subjects were 129 Polish “upper intermediate or advanced learners of English”.

They took a test in which 20 headwords were accompanied by their definitions. “Half of these were target items, abstract English noun entries where the original English headwords were replaced with pseudowords [...]. The remaining items served as distractors: five verbs and five adjectives.”

[...] half of the target items were accompanied by analytical definitions and the other half – by single-clause *when*-definitions. Two versions of the test were prepared, which differed in the assignment of the type of definition to the target items –the nouns which were given analytical definitions in version 1 were accompanied by *when*-definitions in version 2, and the other way around. Each subject dealt with one version of the test, and thus with both analytical and *when*-definitions of the nouns, which maximally reduced the potential effect of the learner variable.

The test consisted of two tasks: “supply Polish equivalents and compose English sentences with the headwords”. As stated above, the researchers intended only to investigate the *when*-definitions’ usefulness for conveying syntactic (or, more precisely, part of speech) information.

Results:

- In both tasks, the analytical definitions were significantly more useful for recognizing the target words’ part of speech than the *when*-definitions.

Rates of success in the two tasks:

analytical definitions: 66.7% / 53.6%;  
*when*-definitions: 33.2% / 26.6%.

### **Lew & Dziemianko (2006a)**

The aim of this study was the same as in Lew & Dziemianko (2006), but, while in that investigation headwords were accompanied only by definitions, this time “part-of-speech labels, other functional labels, mainly syntactic codes, example sentences and, where applicable, usage labels were supplied” (p. 281).

The subjects were “238 native speakers of Polish receiving EFL instruction in 23 different learner groups from various schools around Poland, most being at the intermediate level of proficiency in English” (p. 281 f.).

The subjects were asked to complete a single multiple-choice task using the entries provided. For each entry, a choice of three Polish equivalents were given, all related in that they represented different parts of speech, i.e., adjectives, nouns and verbs, in this order, all derived from the same root. The subjects were also asked to underline those parts of the entries which they were referring to while engaged in the task. [...] All responses were entered into a relational database and fed into a statistics package for further processing (p. 282).

Results:

- “Correct syntactic class identification”: analytical definition – 86.1%; *when*-definition – 85.4%; the difference is not statistically significant.
- “Mean number of consultations of the four microstructural entry elements for all noun items (out of 10)": syntactic label (i.e. *noun*) – 7.43; example – 1.52; definition – 1.11; syntactic code (e.g. [U], i.e. “uncountable”) – 0.34.

The authors conclude that subjects had been “able to compensate for the syntactic inadequacy of single-clause *when*-definitions by referring to other elements of the microstructure” (p. 288); but this should be obvious, since the syntactic label *noun* was provided in the entries. What is astonishing is that look-ups were, in both conditions, not 100% successful (which seems to indicate lack of reference skills or, more probably, lack of attention or acumen).

### Szczepaniak (2006)

In this book, a revised version of her doctoral thesis, defended in 2004, the author deals with idioms. In the last chapter (p. 59-90), she reports on a study which, according to her, attempted “to explore the effect of dictionary use on reading comprehension performance of highly advanced EFL learners” (p. 59). In reality, she investigated the influence of dictionary use on the comprehension of idioms.

The subjects were 143 Polish university students majoring in English in their fourth or fifth year, “representing a high level of proficiency in English” (p. 63).

They were divided into two groups. Group A, consisting of 75 students, was a control group, in which dictionaries were not available. The remaining 68 subjects were Group B, the experimental group.

The author wanted to discover to what extent these students understood idiom variants, i.e. idioms which occurred in a text in a non-canonical form, and to what extent look-ups in an MLD (more precisely, LDOCE3) would help.

Each of five authentic texts, slightly modified so as to contain approximately 150 words, contained one such idiom variant. For example, the idiom *to be tarred with the same brush* appeared in a different form in the sentence “[...] the United States should not be tarred with the colonial brush”.

Group A received three tasks.<sup>192</sup> After each, the subjects had to hand in the respective sheets. The tasks were: (a) to read the five texts and paraphrase (in English or Polish) the underlined passages (in which the idiom variants occurred, as in the above example); (b) to provide the canonical form of the idiom and to rate their familiarity on a scale of 1 to 5; (c) “to form idioms using word-cues (those parts of the idioms that remained unaltered in context, i.e., the parts common to the canonical and the modified form) and to write short definitions” (p. 64).

The tasks of Group B were almost the same, with the following differences: (1) After the end of the first task, the students could consult the dictionary and, if necessary, correct their paraphrases; they were also asked to provide certain information about the look-up and about their general use of LDOCE3. (2) In task “b”, they did not need to rate their familiarity, but rather to choose one of the following options: “I knew the idiom so I didn’t look it up”, “I knew the idiom but I looked it up”, “I didn’t know the idiom so I looked it up”, “I didn’t know the idiom but I didn’t look it up” (p. 72). (3) In task (c), they had to rate their familiarity with the idiom before the consultation.

For several reasons, the data regarding one of the five idioms had to be eliminated.

The paraphrases, meant to measure the comprehension of idiom variants before and after consultations, were scored by two raters independently. They were considered “correct” (1 point), “partly correct” (0.5) or “incorrect” (0). The same scoring procedure was adopted for the indication of the canonical form of the idioms and for the definitions written by the students.

Main results:

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<sup>192</sup> The author’s explanations of the procedure are quite confusing and poorly organized. For example, in the section on the subjects (p. 63), she explains the tasks of Group B, but not of Group A, and in the section on the procedure (p. 64), she only mentions Group A. The section on the design of the study (p. 60) is not comprehensible without further information.

- The quality of the paraphrases written by Group A and those provided by Group B before dictionary consultation were very similar. After the look-ups, Group B scores rose (from 0.18) to 0.27, an improvement of 50%. The differences between the four idioms were enormous (p. 66).
- In the two parts of task “c”, Group B scored significantly better than Group A: in the indication of the canonical form the means were 0.47 and 0.16, respectively, and in the writing of definitions 0.51 and 0.11 (p. 74 f.).

These results seem to prove the effectiveness of the use of LDOCE2. However, in a section entitled “*paths*” (in which she analyzes whether the look-ups led to “improvement”, “no improvement”, “confirmation” or “deterioration”), the author shows other data and concludes (p. 74):

Disappointingly, dictionary use yielded negative results in 72% (50% + 22%) of cases by fostering or corroborating erroneous ideas, and generated or supported positive ideas in merely 28% (22% + 6%). Out of 46 “improvement” paths only 19 involved a full-point increase, and 15 “deterioration” paths reduced the scores by one or by half a point. Consequently, the final score after consultation turned out to be as low as 0.27.

After discussing the answers to several research questions (e.g., “What are the results of processing contextual and dictionary information during reading as reflected in the definitions of standard idiomatic meaning?”), Szczepaniak asserts in her concluding remarks (p. 84 f.):

As was expected, the dictionary turned out to be essential to the successful completion of the paraphrase task as a source of the hardly inferable canonical meaning of idioms. However, despite a 50% rise in scores after consultation, in only two cases [of the four idioms] was the difference between the dictionary and no-dictionary condition statistically significant.

### **Al-Bader (2007)**

[Al-Ajmi (2008: 18)]

Al-Ajmi provides the following information:

A more recent study (Al-Bader 2007) tested Kuwait University students using four EFL dictionaries to verify the effectiveness of definitions only versus definitions plus examples. However, Al-Bader (2007: 101) found that ‘results were not enough to decide whether the existence of sentences along with definitions play a substantial role in understanding the meaning of English words, as most of the students have identified the meaning of the words with or without the assistance of illustrative examples.’

### **Lew & Pajkowska (2007)**

The effects of signposts had been investigated by Tono (1997) and Bogaards (1998). Lew & Pajkowska wanted to “verify experimentally the usefulness” of such devices in the fourth edition of LDOCE, investigating “the effect of entry length as well, to see whether signposts work equally well in both short and long entries or whether there is a difference depending on the length of the entry” (p. 239). They included users’ educational level as

one variable, and they measured access speed, translation accuracy, and sense selection accuracy.

The subjects were 51 Polish secondary school students aged 16-19. Twenty of them had been taught English for three or four years (lower-grade group), the others for six to seven years (higher-grade group). They had not received any training in dictionary use, and very few of them had used MDs; but most of them were familiar with LDTs.

The authors provide the following information on instruments and procedure:

[...] a 10-item test was prepared. Each item on the test [...] took a single page and consisted of a fairly simple English sentence with an underlined word or expression and an incomplete Polish translation, where the missing target word was to be translated with the help of a dictionary entry that was placed underneath both English and Polish sentences. There was also a space below the dictionary entry where subjects were asked to note down the time it took them to complete the task. Each set of the test consisted of ten pages which had been stapled together and handed in to the subjects at the beginning of the procedure.

[...] in order to estimate the difference between the effectiveness of signposts in short and long entries, 5 items with short entries (up to 4 senses) and 5 items with long entries (up to 10 senses) were used, so as to get the data on how each subject performed with short and long entries. The long and short entries were alternated within each set to minimize any effect of order, due to factors such as fatigue or discouragement. Two different versions of the sets were employed in the study: one with signposts (25 subjects) and one without signposts (26 subjects).

The subjects were asked to read the English sentence with the underlined word or expression and its Polish translation with a gap for the target word. Then they had to look up the target word in the dictionary entry placed below the sentence on the same page. After they had found the relevant information they were expected to underline it in the dictionary entry, translate the English word into Polish using the appropriate part of the definition and signal task completion to the research supervisor by raising their hand, and the exact time was noted down (p. 241).

## Results:

- Search time: In the signpost condition, look-ups were 14.4% faster, but the difference is not statistically significant.
- Translation accuracy: The accuracy rates were nearly identical in both conditions.
- Sense selection accuracy: with signposts – 79.9%; without signposts – 71%; the difference is not significant.
- Entry length:
  - “[...] in long entries, mean translation accuracy was about 10% higher for signpost-equipped entries, but in short entries it was actually the non-signpost entries that achieved a slightly (5%) higher mean accuracy”;
  - “[...] we found no difference as to how helpful signposts are in shortening the search time in short and long entries, or assisting in sense selection.”
- Educational level:
  - “[...] signposts did not improve the lookup speed for lower-level students any more than they did for higher-grade users”;
  - “largely the same is true for sense selection accuracy”;
  - “while in the higher-grade group, signpost-supported entries yield higher mean translation accuracy, in the lower-grade group, it is the bare (non-signpost) entries that result in a higher mean accuracy, the differences between the means”; “the difference is not very far from statistical significance”.

### **Al-Ajmi (2008)**

After discussing the topic *dictionary examples*, the author reports on a study of the effectiveness of such examples.

The subjects were “54 juniors at the Department of English, Faculty of Arts, Kuwait University enrolled in translation courses as well as English writing and conversation courses, all of which require extensive use of both bilingual and monolingual English dictionaries” (p. 19).

A pilot test showed that 10 rather difficult words (*aftermath, aisle, bona fide, deflect, elide, grandeur, lingua franca, ominous, repulsive, restive*) would have to be looked up by the students “either for total lack of knowledge or uncertainty about their meanings” (ibid).

The subjects received a list of these words, together with copies of the entries taken from OALD. However, one half of the students were shown only the definitions, whereas the list of the other half contained entries with definitions plus examples.

The task was to translate the target words.

“Correct and incorrect responses were determined by comparing students' translations with Arabic equivalents in the English-Arabic dictionary Al-Mawrid, the most popular bilingual dictionary in the Arab world.” (p. 20)

The responses were assigned to one of the following categories: “1) The translation is correct and identical with Al-Mawrid. 2) The translation is correct and synonymous with Al-Mawrid. 3) No translation has been given. 4) The wrong translation is given. 5) The translation is a derivative, but related to Al-Mawrid. 6) The translation is a derivative, but unrelated to Al-Mawrid.” (ibid) Categories 1, 2 and 5 were considered indicators of the students' ability to understand information in the dictionary entry; the others seemed to indicate their inability to do so (categories 3, 4 and 6).

Result:

- “Out of the 327 instances in categories 3, 4, and 6 that indicate inability to comprehend the entry, 155 (47.4%) were associated with the use of definitions only while 172 (52.6%) were recorded for those who used definitions plus examples.” (p. 21)

Al-Ajmi comments on this astonishing result as follows:

It appears that the policy followed in the construction of definitions in the OALD excels over that adopted in its examples. The language of its definitions might be easier and clearer than the language of the examples which might contain other unfamiliar words, thus leading to confusion and more text to be processed by the definition-plus-example group (ibid).

### **Alonso Ramos (2008)**

The abstract of this paper reads as follows:

It is generally acknowledged within the Spanish as second language (SSL) community that collocations need to be taught and that collocation dictionaries are useful. Nevertheless, no one has carried out yet any experimental study to investigate what kind of collocation information must be included into a dictionary and how to encode it for a user to take full advantage of it. We describe the results obtained from a small experiment in the use of collocation dictionaries in the teaching of SSL. More precisely, the goal of this experiment is to verify whether the

inclusion of semantic and syntactic information on collocations into the dictionary as well as examples of usage could correlate with a better performance on the part of learners.

This is namely the premise underlying the *Diccionario de colocaciones del español* (DiCE). DiCE is based on the *Explanatory and Combinatorial Lexicology* (Mel'čuk et al. 1995), where collocations are assigned semantic labels and syntactic tags lexical functions. In order to weigh up how useful this information is, we had to compare the DiCE with another dictionary which did not include this information: the only dictionary that has been published in Spanish which deals with collocations is the *Diccionario combinatorio práctico* (DCP, Bosque 2006).

The experiment was conducted on 25 learners of Spanish and 5 native speakers. Its goal was to evaluate whether the users of the dictionaries had better results with the dictionary that included semantic and syntactic information of each collocation. Since we needed to know their previous knowledge, we decided to organize the test according to three different criteria:

1. without any collocation dictionary;
2. with the DCP, and
3. with the DiCE.

On the one hand, the results of the experiment are positive but, on the other, worrying. Positive because they confirm our premise: in general, students perform better when the dictionary includes semantic and syntactic information on collocations, and worrying because they show that in some cases, the performance of the students decreases when they use the dictionaries mentioned above. Further, more extensive studies are needed to investigate this phenomenon.

### **Dziemianko (2008a)**

The subjects of this study were “252 advanced students of English [...], who at the time of the experiment studied English at Poznań University, and 196 intermediate students [...], who attended high schools and junior high schools across Poland” (p. 457).

Since the paper is available on the internet (<http://versita.metapress.com/content/j635516847806301/fulltext.pdf>), I quote only the abstract:

Two aspects of English syntax were chosen for closer analysis in the present paper, i.e., subject-verb concord involving collective nouns in the singular and the syntactic marking of noun reclassification from the category of uncountable nouns to that of countable ones with the help of the indefinite article. The study aims to find out which of them is more difficult for Polish learners of English and whether the degree of difficulty depends on the learners’ proficiency in the foreign language. The discussion is based on the results yielded by an empirical study in which intermediate and advanced Polish students of English took part. The subjects had to complete partial English translations of Polish sentences with specific low-frequency English nouns which substituted true English equivalents of the Polish nouns shown in the sentences. The study reveals that marking subject-verb concord in the case of collective subject nouns was as difficult for the subjects as signaling the count-mass distinction by means of the indefinite article and the zero article, respectively.

### **Grochocka (2008)**

Sixty Polish high school students “at the upper intermediate and advanced levels of proficiency in English” (p. 474) participated in this study. The abstract of the report reads as follows:

The paper presents a study aiming at comparing the usefulness of the definitions of abstract nouns in a pedagogical dictionary (*Oxford Advanced Learners Dictionary*, OALD7) and a

native-speaker dictionary of English (*The New Oxford Dictionary of English*, NODE). It starts with a brief description of the subclass of abstract nouns, which is conceived of as a prototypically-structured category composed of members exhibiting different degrees of resemblance to the prototype. Moreover, the most prototypical members of the subclass of abstract nouns are proposed and a comparison of the definitions of abstract nouns from the two dictionaries is made. The paper then reports on the empirical study which investigated the usefulness of the definitions of abstract nouns from the two dictionaries for a group of 60 dictionary users whose level of English oscillated between upper intermediate and advanced. Finally, the results of the study are discussed and an attempt is made to set out the possible reasons for the final outcome of the study.

Since the paper is available on the internet (content/t0m2102j517r413l/fulltext.pdf), I restrict myself to presenting the general result:

- [...] subjects were more successful in providing correct Polish equivalents for English abstract nouns accompanied by definitions from OALD7 (47.25%) than for nouns whose definitions were taken from NODE (39.75%). An Analysis of Variance (ANOVA) showed that the difference between the equivalent accuracy rates for definitions from the two dictionaries is statistically significant.

### Gumkowska (2008)

The following information was kindly provided by Robert Lew:

The main purpose of the research was to verify whether pictures can be helpful for learners in vocabulary acquisition.  
Mean retention score across all subjects for items with pictorial illustrations were 78.3%, as against 69.2% for items without illustrations. The difference between these two conditions turns out to be significant at the 5% level (t-test for paired samples,  $t = 2.58$ ,  $df = 38$ ,  $p = 1.4\%$ ).

### Dziemianko (2010a)

Here is the main part of the abstract:

The aim of the present study is to investigate the usefulness of the *Oxford Advanced Learner's Dictionary of Current English* (7th edition, OALDCE7) and the *Oxford Learner's Thesaurus* (OLT) for discriminating between synonyms. The paper is underpinned by empirical research, in which 73 advanced learners of English took part. In the experiment, words appropriate for given contexts had to be indicated in different synonym sets. The results reveal that neither dictionary significantly shortened the time needed to complete the task. Nonetheless, the use of OLT much more often resulted in successful synonym selection. Interestingly, synonym notes, present in both dictionaries, did not affect the subjects' choices. Besides, different information was usually referred to in the two dictionaries. In OALDCE7 the subjects paid attention most often to definitions, while in OLT – to examples. The results of the supplementary questionnaire suggest that the students' familiarity with the two dictionary types could not have affected their performance. They were nonetheless more satisfied with their results when they had OLT at their disposal rather than OALDCE7. Yet, they were critical of the arrangement of synonyms in the OLT synonym clusters, where the alphabetical order, rather than frequency, would be a better solution.

## Lew (2010)

In the second paragraph, Lew provides the following explanation:

The two major systems [of access facilitating devices] currently in competition appear to be the menu system and the signpost system. In the former, guiding words and phrases are gathered in a single block above the entry proper. In the latter, cues (known variously, depending on the publisher, as shortcuts, signposts, guide words, or mini-definitions) are distributed throughout the entry, introducing the respective senses within it.

As indicated in the title, he preferred the term *shortcuts* to *signpost*, *guide words* and *mini-definitions*.

The abstract reads as follows:

In the present paper we compare the effectiveness of two alternative meaning access facilitators in a monolingual learner's dictionary: a Menu system, placed at the top of a monolingual entry; and a Shortcuts system, where the cues are distributed throughout the entry. We test the two entry formats on 90 Polish learners of English at two CEFR levels, A2 and B1. The task which triggers dictionary consultation is guided translation from English to Polish. Three outcome measures are evaluated: access time to sense, accuracy of sense selection, and translation accuracy. While Menus and Shortcuts turned up no difference in terms of consultation speed, the task success was significantly better in the Shortcuts condition. Sense selection accuracy was also better, though not significantly so, for the Shortcuts. The overall conclusion of our study is that Shortcuts are more user-friendly than Menus, although this may also depend on the form of the cues and the medium of presentation.

## Lew & Radłowska (2010)

The text of this paper is available on Lew's homepage ([http://www.staff.amu.edu.pl/~rlew/pub/Lew\\_publ.htm](http://www.staff.amu.edu.pl/~rlew/pub/Lew_publ.htm)). I quote only a few passages concerning the investigation:

The present study undertakes to assess the success with which [18] intermediate pre-university Polish learners of English are able to locate English collocations in two learners' dictionaries, representing two different dictionary types. The first of these is a general dictionary for learners, *Longman Dictionary of Contemporary English*, fourth edition (LDOCE). The second dictionary is a special-purpose dictionary dealing specifically with collocations, the *Oxford Collocations Dictionary* (OCD). The collocations are classified into several types for the findability test. [...] Students were requested to supply missing words in 13 gapped sentences in a way that would fit the context. The task was done with the assistance of dictionary booklets, consisting of dictionary entries relevant for the test items. There were two versions of the booklets: nine subjects were supplied with entries from the OCD, the other nine from LDOCE. To explain how they should go about the task, subjects were provided with one example that contained two sentences. The first sentence was formulated in Polish, and the second one was its partial English translation with a gap to be filled in (see Appendix 1). The test proper consisted of 13 items representing 9 different types of lexical collocations: V+N, Adj+N, N+V, N+N, Adv+Adj, V+Adj, V+V, V+Adv, N1 of N2 [...]. We made sure that all of the tested collocations were covered by both OCD and LDOCE. [...]

At the scoring stage, one point was granted for each correctly given collocation, bringing the maximum total score to 13.

Result:

- Overall mean success rates: with LDOCE – 68%; with OCD – 49%; the difference is not statistically significant.

In their conclusion, the authors argue:

The differences in performance noted in our study can most likely be attributed to two factors. Firstly, semantic explanation, when present, provides assistance in assuring that the right collocational item has been found. Secondly, example sentences and phrases can be used as a check that appropriate collocations have been located. These two elements are missing from the special-purpose dictionary of collocations, and it appears that this lexicographic decision negatively affects the findability of items.

### **Dziemianko (forthcoming)**

The following abstract was kindly sent to me by the author and by Robert Lew, editor of a Special Issue on Dictionary Use of the *International Journal of Lexicography*, to be published in 2011:

The aim of the paper is to assess the user-friendliness of noun and verb coding systems in monolingual dictionaries for foreign learners of English (MLDs). The paper opens with an overview of noun and verb codes in MLDs. Two coding systems are identified: mainstream and alternative ones. They inspired an empirical study, presented in the main body of the paper, in which around 900 native speakers of Polish took part. Besides their level of proficiency in English, the following variables were included: degree of syntactic congruence between English and Polish lexical items, form of codes and part of speech. The subjects were given a test in which they were to complete partial English translations of 12 Polish sentences using specific nouns and verbs in appropriate syntactic constructions. The nouns and verbs were headwords of dictionary entries compiled for the purpose of the study and manipulated accordingly. The results indicate that differences in syntax between the Polish and English lexical items did not influence the user-friendliness of either noun or verb codes. The form of codes, by contrast, did affect the results inasmuch as alternative verb codes were more user-friendly than mainstream ones for both the advanced and intermediate learners. Mainstream noun codes, in turn, proved more user-friendly than alternative ones only for the advanced students. The effect of the part of speech depended on the level of proficiency; it was nonexistent in the less advanced group, but in the proficient one it was additionally modified by the form of codes. Finally, the more proficient subjects relied on codes more often than the intermediate ones.

### **Laufer (forthcoming)**

The following abstract was kindly sent to me by Robert Lew, editor of a Special Issue on Dictionary Use of the *International Journal of Lexicography*, to be published in 2011:

Ninety five high school learners of English as L2 received thirty sentences without verbs of the target verb-noun collocations. They were asked to fill in the missing verb, first without any dictionary assistance and subsequently with it. Dictionary assistance consisted of three dictionary entries for each of the nouns, from English-English-Hebrew dictionary, LDOCE and either COBUILD, OALD, or CALD. Learners also reported in which dictionary they found each verb. A week later, they were unexpectedly tested on the recall of the target collocations. Three scores were compared: the number of correct verbs supplied with and without the dictionary entries, and the number of verbs retained on the test. Learners' reports on dictionary effectiveness were analyzed as well. Results showed that at times learners had difficulty finding

the right verbs, but often they thought they knew the collocations and did not think it was necessary to consult the dictionary.

## 5.2 Studies of the use of specific dictionaries (or of a specific dictionary type)

As was implied in the introduction, improper generalizations should be avoided. For example, if one single dictionary was consulted by the subjects, the results should not be used for making general assertions on dictionary use. In order to draw attention to this fact, investigations in which only one dictionary or a special dictionary type (more precisely, the LDT type) was used are brought together in this subchapter.

### 5.2.1 Actual dictionary use

#### Kharma (1985)

In addition to a questionnaire survey (the report on which is summarized in 2.2), the author employed tests to examine reference skills and the difficulties of using an English MLD, *viz.*, the OALD, owned by all the students. Having studied English for eight years at school, his subjects were now studying that language at the University of Kuwait. Kharma administered tests to several groups, but does not reveal the number of subjects or the exact modality of all the tests. The aim of the first one was to discover how familiar the students were with the OALD; the second test “concentrated on pronunciation”; the third “consisted of words in their verbal contexts, i.e. in complete sentences” (subjects “were asked to give some grammatical features and the exact meaning from the dictionary”); the fourth test “explored the students’ knowledge of grammatical features [...] and their ability to find the correct synonym or accurate definition of the item”; and the fifth test (in fact a series of ten separate tests) “consisted in a complete passage [...] that the students were asked to read and try to comprehend” (“In the process they had to look up in their dictionaries a number of underlined words in each passage” and find out several types of information.)

Results (p. 88):

- Between 90% and 100% of the subjects were able to interpret phonetic symbols.
- Only 50% understood the symbols that indicate stress.
- 0% to 30% understood the OALD’s “sentence pattern symbols”.
- “Strangely enough, the abbreviations which indicate other grammatical features or specialized disciplines did not pose any problem.”
- 60% of the subjects were familiar with grammatical features and 75% were able to understand the meaning of words occurring in complete sentences.
- In the reading test, only 50% were able to give the Arabic equivalent of underlined words.

- Most students “found great difficult deciding where to look up idioms, compounds and proverbs”.

### **Starren & Thelen (1990)**

As has happened in several other studies, the authors published only certain “preliminary results” of their investigation. Apparently there was no final report, despite their assertion that they were still working on the analysis of data and that there would be a “follow-up” of their project (p. 451).

Declaring that for “students of translation, dictionaries (and other reference books) are indispensable tools in the learning process” (p. 447), they wanted “1) to find a way to teach students of translation to use dictionaries properly [...], and 2) to find out whether dictionaries are organized adequately and whether they are helpful for students of translation” (p. 448).

As to item (2), they administered a test to 34 subjects, who were third-year and fourth-year students at the Dutch State School of Translation and Interpretation in Maastricht. It seems that they were Dutch, and their FL was English.

Their task was quite complex, but I will summarize it briefly.

Apparently groups of three students each were formed.<sup>193</sup> The subjects had to translate a Dutch text into English, consulting nine lexical items (certainly rare or difficult), which were underlined. First, they had to look up the underlined items in one of three specific English MLDs, formulate an initial interpretation in Dutch and indicate which part of the entry had been helpful. Later on, an English-Dutch BD was used to check “whether this interpretation was given literally as a translation equivalent”. Finally, they were asked to check in a Dutch MD “whether the various individual interpretations, but also the equivalents and other suggestions of the [BD], could be maintained as a basis for a final translation” (p. 451).

Starren & Thelen acknowledge that “[b]ecause of the rather small number of items selected and participating students, our results can hardly be called conclusive” (p. 451). As a matter of fact, they present only this one: Having calculated the number of times that the initial interpretation was confirmed by the [Dutch MD] and by the BD, they noticed that there were no significant distinctions between the dictionaries.

### **Hartmann (1994)**

The author reports on a study carried out at the University of Exeter (Great Britain) on the actual use of LDTs (“bilingualised learners’ dictionaries”).

Eight participants in the Exeter M.A. Course in Lexicography collaborated. “Each of the eight students (referred to as ‘observers,’ ‘testers’ or ‘investigators’ [...]) undertook to find and interview three or more ‘informants’ and to [...] observe them during a reading comprehension task [...]” (p. 211). In this way, 28 subjects were found at the same university. They were native speakers of the following languages (for which bilingualised

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<sup>193</sup> The authors do not reveal any detail about the groups. Only once do they mention “the subgroup (of 3 students)”.

versions of English MLDs existed): Arabic, Dutch, French, German, Greek, Korean, and Spanish.

Their task was to read an English text of their choice and to answer certain questions. Although Hartmann uses the expression “reading comprehension task”, the students were not tested, since the aim was only to investigate actual use of LDTs.

The “observers” were requested to observe the subjects during the reading and the look-ups and to interview them. Several “checklists were prepared to assist [them] with their task” (p. 212), e.g., “a one-page matrix table in which various reference acts (checking definitions and/or translations) were to be entered” (p. 213).

Results concerning the use of LDTs (author’s assertions, p. 213 f.):

- “The genre of the bilingualised dictionary is still largely unknown among its potential users, foreign learners of English.”
- “The seven dictionaries observed in action can assist learners in the reading comprehension task, provided the demands of technicality and vocabulary range are not too great, and users have good reference skills.”
- “Users appreciate the juxtaposition of target-language definitions and mother-tongue translation equivalents.”
- “Bilingualised dictionaries provide a useful bridge between the traditional bilingual dictionary (still associated with low-level proficiency) and the monolingual dictionary aimed at advanced learners.”

### **Köster & Neubauer (1994)**

In the abstract it is said that the article “presents observations of how foreign undergraduate learners use the newly published learners’ dictionary of German” (*Langenscheidts Großwörterbuch Deutsch als Fremdsprache*), and the authors assert that they employed a combination of protocol and retrospective interviews. However, they do not reveal the number of subjects or any quantitative data. Instead, they themselves analyze and evaluate that German MLD, claiming sometimes that students had problems with certain features. In the end they hold that for advanced learners the dictionary is, despite several deficiencies, better than most German L1Ds.

### **Augst (1997)**

In Germany, a spelling dictionary (*Duden Rechtschreibung*) is the most consulted German dictionary. The author wanted to find out how it is used.

A four-column form was given to approximately 50 people, who were asked to write down details of their consultations during one month: date, problem, procedure, and solution. Only 26 informants returned this protocol. Augst recognizes the limitations of his study (small number of informants and the general problems of unsupervised protocols). Apart from presenting certain quantitative data, he shows which words were looked up, provides some examples of consultation procedures, and comments on cases of unsuccessful look-ups.

General results:

- On average, the 26 informants consulted the dictionary 8 times.

- Information searched: spelling – 77.9%; meaning – 16.3%; word form – 5.3%; pronunciation – 0.5%.
- 84.6% of look-ups were successful; in 9.1% the answer did not exist in the dictionary, and in 6.3% the informants did not find it, although the dictionary provided it.

Besides the shortcomings of this study mentioned above, another defect is that Augst does not state who were the informants.

### **Harvey & Yuill (1997)**

The object of this study was the first (1987) edition of COBUILD. The authors use the acronym CCELD (*Collins COBUILD English Language Dictionary*), but I will employ the acronym “COBUILD”, because it is better known.

Harvey & Yuill “aimed to establish: for what reason learners turn to the dictionary for help when involved in written work; how useful [COBUILD] proves itself to be as a source of information for problems that arise during written work” (p. 254).

There were 211 subjects, of 28 native languages (p. 257, 273 f.). They were learning English (probably in England) in private language schools (135) or at university (76). Their language proficiency was not tested. The authors explain: “When selecting groups of learners to participate in the experiment, we asked language schools to identify those whose competence would allow them in normal circumstances to use unaided a monolingual pedagogical dictionary like [COBUILD]” (p. 257).

Subjects were asked to write an essay on one of four themes and to fill in forms (two of them being called “flowcharts”) each time they consulted the dictionary. For example, in the first of the flowcharts they had to indicate whether the relevant information was found easily, which part of the entry was most useful, whether the look-up was successful or why it was not successful. Harvey & Yuill, quoting other authors, acknowledge that an introspective method like this implies that “the task itself interfered with the action [...] in that it constituted a dwelling upon the look-up and thereby prolonged interruption of text encoding” (p. 256).

Since the students had to know certain lexicographic terms, they were taught beforehand what the authors mean by “top of the entry”, “definition”, “example” and “extra column”.

The subjects’ data on 582 look-ups were complete, or “processable”, so that the results are based on these 582 consultations.

Main results:

- 85.4% of look-ups “were motivated by only one reason for looking in the dictionary, 12.9% were for two reasons, and the remaining 1.7% were for more than two. The total number of reasons stands at 679”. (p. 258) The word “reason” probably refers to the information wanted.
- 88.4% of look-ups motivated by 679 reasons were considered successful. In 81.2% of successful look-ups, the information was found easily. In 7.2% of successful look-ups, subjects marked that the information had not been found easily, because (a) there were many sections in the entry (4.1%), (b) the student had to look in more than one place (2.4%), (c) the definition was difficult to understand (0.7%).
- 11.6% of the pieces of information sought were not found, because – again according to the subjects – the entry did not provide the information (6.2%), the entry was missing (5%), or the information was not understood (0.4%).

- Percentages of “reasons” for look-ups (i.e. of types of information sought): spelling – 24.4; meaning – 18.3; existence (i.e. whether the word exists in English) – 12.8; synonyms – 10.6; grammar – 10.5; register – 9.3; collocation – 8.2; inflection – 5.9.

Harvey & Yuill provide many more details about the look-ups, especially percentages of successful look-ups when specific types of information were sought, and they comment on the reasons and on peculiarities of COBUILD. For example, in the case of grammar, “[t]he most surprising fact to emerge was that the searches reported to be successful did not stem from the use of coded information in the extra column”; [i]nformants overwhelmingly located grammatical information in the examples and, to a lesser extent, the encoded definition” (p. 267). And as regards meaning, “learners look for and locate meaning in examples, even when, as in [COBUILD], the definitions are written as a full sentence and the item is placed in a reasonably natural context” (p. 262).

In their conclusions, Harvey & Yuill point at the high success rate of look-ups and remark that COBUILD “proves itself to be generally of use to learners in answering their questions while writing” and that the “examples and definitions are relied upon by learners to provide information of many different types”, while the extra column is “largely unused as a source of grammatical information” (p. 271).<sup>194</sup>

### Laufer & Kimmel (1997)

After Laufer & Melamed’s (1994) study, in which the subjects preferred LDTs to BDs and MLDs (cf. 4.1 and 4.2), Laufer & Kimmel wanted to find out whether users really take advantage of the LDTs’ peculiarity, *viz.*, the existence of both definitions and equivalents.

In this investigation, the subjects were 70 native speakers of Hebrew; 39 were eleventh and twelfth grade high school students who had been studying English for seven or eight years, and 31 were university students taking an EAP course.

The method was very similar to Laufer & Melamed’s in the comprehension part of their study: subjects were asked to look up the same 15 low-frequency words (which were unfamiliar to them) and take a multiple choice test.

For 10 of the fifteen words, special entries were prepared. In half of them, the English definition was wrong; in the other half, an incorrect Hebrew equivalent was given. The authors wanted to verify which part of an LDT the students consult. In the entries of the remaining five words, both parts were correct; these words and entries served only as distractors. The data relative to them were not taken into account.

In the multiple choice test, there were four options, in which easily understandable definitions were provided. Two options referred to the equivalent (with one correct definition and one giving an approximate meaning) and two were related to the English part of the entry (again with one correct and one approximate definition).

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<sup>194</sup> In her comprehensive summary, Nesi (2000: 41f.) praises this study very much (“The information-gathering instruments used by Harvey and Yuill were extremely thorough and complex, and resulted in a wealth of data.”), but, apart from criticizing some aspects, she also remarks that the method “appears to be extremely difficult to replicate, involving not only willing researchers, but also exceptionally willing subjects, who have the time to write essays under experimental conditions, and learn how to introspect and retrospect”.

In the case of the 10 target words, only those subjects who read both parts of the entry were able to notice the discrepancy between the English definition and the Hebrew equivalent “and therefore choose both the Hebrew and English-related answers”. During the test, some students asked “why the two languages did not match in some cases” (p. 365); the researchers answered “that apparently the word had more than one meaning and each language provided one of these meanings” (which, of course, was not true).

The answers (i.e. choices) were divided into three groups, according to the part of the entry which apparently had been consulted: H (Hebrew part), E (English part), and B (both). According to their preferences in the look-ups, subjects were assigned to one of five categories: H, E, B, H/B, H/E/B. They were assigned to one of the first three categories when more than half of the answers showed that the respective part of the entry had been consulted. “H/B” means that “half of the answers were English and half Hebrew-oriented”, while “H/E/B” refers to consultations of all three types.

Results:

- High school students as well as university students preferred the equivalents (H), but the difference between this look-up behaviour and the preference for English definitions (E) was not significant. Both parts (B) were consulted much less (by only 12.7% of high school students and 15.06% of university students), and the difference between H and E on the one hand and B on the other was significant.
- Percentages of the five categories of look-up behaviour:: H – 31%; E – 27%; H/E – 22.5%; B – 10%; H/E/B – 9.5%.

Although less than 14% of the subjects had consulted both parts, Laufer & Kimmel, taking into account the five categories of look-up behaviour, conclude that “both languages are used, albeit not simultaneously and not for each word” and that the LDT “seems to cater for a variety of look-up possibilities and individual preferences” (p. 368).

### Coura Sobrinho (1998)

The author investigated the effects of the use of a French MD on reading comprehension. Please see this part of his study in 5.2.2.

Here I show only certain data presented by Coura Sobrinho in subchapter 4.4 of his master’s thesis, in which he attempted to describe the “look-up behaviour of dictionary users”. His subjects were 17 Brazilian university students who were asked to read an authentic French text with the help of a French MD, more precisely the *Petit Robert Micro Poche*.

Results:

- Parts of speech most looked up in the MD: nouns – 41%; adjectives – 24%; verbs – 18%; adverbs – 8.5%; others – 8.5.
- Parts of entries most consulted: definition – 56%; synonyms – 24%; examples – 14%; antonyms – 1%.
- Successful look-ups: 74.1%. There were two groups; group A, with greater proficiency in French, consulted the MD much more (107 times) and was a little more successful (75.2%); group B did 88 look-ups, with a success rate of 72.7%.
- Success rates when looking up: conjunctions – 100%; numerals – 100%; prepositional phrases – 83%; nouns – 80%; adverbs – 76%; prepositions – 75%; adjectives – 70%; verbs – 62%; verbal

phrases – 50%; pronouns – 0%. (It should be made clear that the percentages do not tell much, since some of them – as in the case of numerals and pronouns – refer to just one look-up.)

Coura Sobrinho also analyses certain errors and points to the possible causes.

### **Wingate (1999)**

After discussing MLDs in general and comparing one English MLD with the only German MLD existing in 1999, the author reports a study in which the TAP method was used.

She asked 4 Chinese students who were studying German in two Hong Kong universities to read two newspaper articles, looking up all unknown words in the MLD (*Langenscheidts Großwörterbuch Deutsch als Fremdsprache*) and expressing what they were thinking during the look-ups. The students had taken a certificate called *Zertifikat Deutsch als Fremdsprache*, which usually is obtained after a little more than four hundred lessons.

Results (obtained from the analysis of the TAPs):

- In entries of polysemous words, subjects looked only at the first definition.
- They substituted the unknown item by a known word they found in the definition. (This is the so-called “kidrule” strategy; cf. Miller & Gildea 1984.)
- They complained about the difficult definitions.

In the rest of the article, Wingate, showing low-frequency words in the definitions, asserts that this German MLD is inadequate for students at the level of this certificate, and makes suggestions both for improvements and for training in the use of MDs.

### **Babenko & Troschina (2004)**

The authors deal with German MLDs and report a study in which they examined the helpfulness of such an MLD published in 2000 (*de Gruyter Wörterbuch Deutsch als Fremdsprache*) in L1-L2 translation.

The subjects were 50 Russian university students “with good or very good knowledge of German” who never had used that MLD, but who were accustomed to consulting general MDs. The authors employed the written protocol method, but did not state whether the protocol was structured.

The students were divided into two groups. In the first group, one of the researchers supervised the task, asking the subjects to look up certain words during their Russian-German translation; the second group translated without supervision.

When presenting the results, the authors do not distinguish the two groups. They analyze the look-ups, show certain examples and show in which cases the MLD helped or failed to help.

In a section entitled “results of the empirical investigations”, the authors summarize the students’ opinions of the MLD. Subjects praised the clearness of the microstructure, the information on synonyms and antonyms and the syntagmatic information, although this

was not always sufficient for L1-L2 translation; and they suggested certain improvements, such as the inclusion of more collocations and of more information on verb patterns.

### **Thumb (2004)**

In view of the great popularity of LDTs in Hong Kong, the author wanted to investigate how they are used. To do this, she employed the TAP method. As was said in 1.3.4, Thumb goes into great detail about this method, its advantages and shortcomings, and carefully details how she proceeded.

First she carried out a preliminary study with two students. Since she considered it successful, it was replicated in the main study.

The subjects were selected in several phases: first, thirteen EAP classes were chosen from eight “faculties” at Hong Kong Polytechnic University; students were asked to fill in a questionnaire about their use of LDTs (frequency of decoding activities); 243 of the 289 students returned it; 139 of them met the pre-established criteria; 45 agreed to participate,<sup>195</sup> but only 41 did so; of the 41 data sets, 18 were chosen for detailed analysis; these were selected “on the grounds of good audio and/or video tape recordings and the ease of students in commenting on their look-up process and behaviour” (p. 54).

The students were asked to read three texts. They received the following “think-aloud instructions”: “identify the [difficult words] and underline them”; “use your dictionary to look up only these words so you can understand the text better”; and “think in a loud voice everything that passes through your head during the search for the meaning of each underlined word” (p. 50).

A vocabulary software program had been run on the three texts and had shown that they “were likely to be suitable because each of them met the [...] criterion of containing vocabulary that the research subjects would need to look up” (p. 47).

The students were allowed to consult the LDTs they had brought with them. Out of the 18 students whose data were analyzed, 12 used the 1984 edition of the *Oxford Advanced Learner's English-Chinese Dictionary*; the others used one of three other English-Chinese LDTs.

The individual “think-aloud sessions were video and audio taped” while “the researcher was sitting by the camera” (p. 50).

Apart from TAPs, Thumb used also “stimulated recall interviews” for triangulation and “follow-up” questionnaires and observations to collect additional data (p. 49). As to the recall interviews, the author asserts:

[...] the researcher explained (in Cantonese) to the participants that by watching the video of their think-aloud session they would be stimulated to recall what their thoughts were during the session. While viewing the video, the researcher paused the tape when the participants were not verbalizing. Then they were asked to recall in Cantonese or in English what they were thinking during that period of silence.

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<sup>195</sup> Thumb enumerates six departments, saying that from each of them five students were chosen. She must have forgotten to mention three departments, since  $6 \times 5$  is only 30, not 45.

These interviews were audio-taped, too. The recordings of TAPs and interviews were transcribed “as verbatim as possible” (p. 52).

In chapter 4 of her book, the author explains in great detail the coding scheme she worked out for the analysis of the TAPs.

In chapter 5 she describes the strategies the 18 subjects adopted in their 264 consultations. Distinguishing seven strategies, Thumb provides examples for each of them. The strategies were: “ignoring the use of ancillary information”, “assuming the only meaning in an entry was appropriate for the target word without showing evidence of context-matching”, “minimizing the use of central definitional and ancillary information in an entry”, “checking inferred meaning against the dictionary meaning to see if they matched”, “paraphrasing a chosen dictionary definition in order to achieve a better contextual fit”, “stretching an idea which was common for all definitions in an entry”, “maximizing the use of [i.e. making use of] central definitional and ancillary information in an entry”.

The most interesting results are presented in chapter 6, entitled “using bilingualised entries”.

#### Main results:

- Only 27 (or 10.2%) of the 264 consultations were unsuccessful. (This score is already shown in the beginning of chapter 5. The author, who was the judge herself, considered as successful those in which the correct meaning had been chosen.)
- In 185 look-ups, subjects consulted the Chinese equivalent only, in 12 the English part only, and in 62 both parts.
- 7 (39%) of the 18 subjects consulted only the Chinese equivalent; none used only the English part; one sole student always looked at both parts.
- After dividing the students into two groups of different proficiency, the researcher noticed that only two of the four higher proficiency students used both parts and that some of the remaining fourteen subjects sometimes consulted the English part.

Thumb imagines that differences between the defining styles of the LDT most used and of another LDT might have influenced the results, but she admits that there are not sufficient data in this regard, because only two subjects used the second LDT.

She also recognizes several limitations to her study, e.g. the small number of subjects, the use of LDTs only in reading, and the fact that the “thoughts of the subjects were not always verbalized” (which was perceived in the stimulated recall interviews).

Although in 70% of the look-ups subjects turned only to the Chinese equivalent, Thumb asserts that it is “justifiable to include both L1 and L2 parts in a bilingualised learner’s dictionary because the results clearly showed that such a dictionary caters for a variety of look-up possibilities and individual preferences and proficiency” (p. 98).

## 5.2.2 The effects of dictionary use

### Benson (1989)

Benson is one of the authors of the *BBI Combinatory Dictionary of English* (BBI), a dictionary of collocations. After dealing with definitions of *collocation* and with this type of dictionary, he reports on two tests whose aim was to test the effectiveness of the BBI.

The subjects were 17 Soviet teachers of English from the Russian Republic and the Ukraine who were taking part in English language programs in the US.

In the first test, they were requested to complete (at home) 25 sentences in which one part of a collocation was lacking. This task was performed twice. On the first occasion, the teachers were allowed to consult English MLDs, but not to ask native speakers for help. Only on the second occasion did they have access to the BBI.

The same occurred in the second test, in which the subjects were shown Russian collocations and their translations into English. Again, one part of the English collocations was missing.

Results:

- Without the BBI, the teachers completed 32% and 40-45% of the collocations in the two tests, respectively.
- With the help of the BBI, they filled in 93% and practically 100% of the blanks, respectively.

Thus the BBI “was found to be an effective tool” (p. 12).

### Bogaards (1994)

The author had been “asked to compile a new bilingual dictionary of Dutch for secondary school students having learned French for two or three years”. The dictionary “had to be compiled as a sort of excerpt of the ‘big’ **Van Dale** French-Dutch and Dutch-French dictionaries”. Therefore he wanted to examine which type of entry structure would be the best. First he shows verb entries from four different dictionaries and explains the peculiarity of the Van Dale microstructure (which Wiegand, 1989, would call “semi-integrated”). In short, intransitive, transitive and reflexive uses of the verb are, as usual, separated. In each of these sections,

for each meaning, indicated as 0.1, 0.2 etc., one or more decontextualized translations are given [...]. For each grammatical use, all examples are grouped together. In order to indicate which example belongs to which meaning, the number of the meaning is repeated before the example; this is always the second digit of the two digit code. [...] The first digit [...] indicates the grammatical category of the word the headword in the given meaning is combined with.

Thus, for example, the code 2.3 means that the examples (or collocations) in this section belong to the third meaning and that the headword is combined with an adjective (i.e. category 2)

In four studies, Bogaards compared the effects of this Van Dale microstructure with that of a traditional medium-size BD called *Kramers*.

### First study

The subjects were 204 Dutch high school students “in different types of classes and in different years of one school”. They had studied French for three, four or five years. They were given sheets which contained a French text and its Dutch translation. In the French text, 27 supposedly unknown words or expressions were underlined; their translation was lacking in the Dutch text. The task was to find the translations in specially prepared “micro-dictionaries”, which “contained photocopies of all the pages [in alphabetical order] they needed to find the relevant information” (p. 196). Half the micro-dictionaries contained pages of the Van Dale BD, and half of them showed pages of the other BD. Since the Van Dale entries are much longer, “extra pages of the Kramers dictionary had been added in order to give each student about the same amount of text”. “All students in one class worked with the same micro-dictionary. In two classes of the same level different micro-dictionaries were used” (*ibid.*).

Results:

- There were no significant differences between the two types of entries, either regarding the numbers of look-ups or concerning the scores the subjects obtained in the translations.

### Second study

After the publication of the new middle-sized Van Dale BD, Bogaards replicated the former study, using photocopies of pages of this dictionary instead of those of the “big” Van Dale. The subjects were 120 students similar to those of the first study.

Results:

- Again there were no significant differences between the effectiveness of the Van Dale and the Kramers entries. However, the number of errors was significantly larger than when the big Van Dale had been used.

### Third study

Bogaards “hypothesized that differences [between the two dictionary types] were nullified by the fact that the students first had to find the appropriate page and then the appropriate entry on that page” (p. 199). Therefore, the second test was replicated, but this time the entries were placed not in alphabetical order, but in the order in which the supposedly unknown words appeared in the text, and the subjects (181 high school students similar to those of the former tests) had only ten minutes to complete the task.

Results:

- There was a significant difference, not in the total number of errors, but in the number of correct translations. The reason was that many more students using the Van Dale BD managed to complete the task in ten minutes.

### Fourth study

With this study, the author wanted to confirm the conclusion that “the high degree of structuring in the Van Dale entries [...] helps to find a larger number of correct translations in a given period of time” (p. 201).

108 Dutch high school students participated. This time the subjects were not given a text, but 27 isolated French sentences and their partial translation into Dutch. Again the task

was to complete the sentences, i.e. to translate 27 French words or expressions. “All subjects had the same micro-dictionary, which consisted of the relevant pages of the Van Dale desk dictionary. The pages were in the order of the words to be translated. In order to minimize all differences in the time needed to locate the word on each page, the relevant entry had been marked with a red asterisk.”

Before the task (which was to be completed within ten minutes), half of the subjects were taught how to use the Van Dale BD (i.e. the two digit code was explained), while the other half were instructed about symbols and abbreviations in that dictionary.

#### Results:

- The first group correctly translated significantly more words than the second one. However, the proportion of errors was almost the same in the two groups.

Bogaards concludes that “it seems again, but now in a clearer way, that the Van Dale structure may indeed help to find words more quickly, even in the case of intermediate learners” (p. 202). Then he comments on the errors, many of which had been caused precisely by the same microstructure, which makes the author admit that “many questions remain” to be answered (p. 205).

### Coura Sobrinho (1998)

In this master’s dissertation, the author reports on a study on the effects of the use of the French pocket MD *Le Robert Micro Poche* in reading. He measured reading comprehension through L2-L1 (French-Portuguese) translation.

The subjects were 22 Brazilian high school students in two classes of 12 and 10, respectively. They were given three tests. In the first, they had to translate a French text without the help of a dictionary. This test showed a proficiency difference of 10.5% between the two classes. In the second and third test, each class, or group, was asked to translate two texts, one without and one with the help of the cited MD. The texts were inverted in the two groups. The students were also requested to write down the words they looked up.

The texts had been selected after an evaluation of their difficulty by nine teachers.

Since not all subjects took the three tests, the results are based on the data of only 6 students in each group.

General results (in percentages of correct translations):

Text	Group A	Group B	Difference between groups
1	76.8%	66.3%	10.5%
2	with MD 81.0%	without MD 58.3%	22.7%
3	without MD 70.1%	with MD 63.2%	6.8%
Difference between “with MD” and “without MD”	10.9%	4.9%	

- Text 2 – but not text 3 – was translated better with the help of the MD. Adding the percentages of texts 2 and 3, the overall score was higher when the dictionary was used.

However, taking into account the differences of proficiency, the author did a covariance analysis, which showed that if the two groups had the same proficiency, the data would be:

	without MD	with MD
Text 2	62.4%	76.9%
Text 3	66.1%	67.3%

Thus, only in text 2 did the MD seem to be very helpful. Coura Sobrinho admits that possibly the two texts did not have the same level of difficulty.

Other drawbacks of this study are the small number of subjects and the fact that an MD was used in a translation test.

### McCreary & Dolezal (1999)

The aim of this study was “to determine the usefulness of an American college desk dictionary (a monolingual English dictionary for native speakers) used by English as a Second Language (ESL) students when taking a vocabulary test” (p. 107). More precisely, the authors wanted to “investigate how these students ‘learned’ (or attempted to grasp the meanings of) words under three conditions: first, from dictionary definitions alone [Group A, 23 subjects], second, from reading words in context alone [Group B, 28 subjects], and third, from both dictionary definitions and context [Group C, 23 subjects]” (p. 114).

The dictionary was the *American Heritage Dictionary*. The authors explain that “[d]esk dictionaries for the college market are very popular in the US”, that this dictionary is “a prime example of the genre” (p. 115), and that MLDs are (in 1999) not very well known in the US.

The 74 subjects were undergraduates from several countries who were advanced learners of English.

After selecting the seventeen most difficult words in an article about the main character of a short story by means of a pre-test, the researchers worked out a multiple choice test (with five options) for these target words.

Groups B and C apparently read the article and the short story at home. During the test, the same groups read the article (in which the target words were in bold print), and groups A and C were allowed to consult the dictionary. In each of the three groups, three students were observed during the test by “experimenters”, who “asked them questions about their dictionary search techniques and their strategies for reading the definitions, the one-word or phrasal equivalents, and the example sentences” (p. 119).<sup>196</sup> These “interviews” were tape-recorded.

The authors analyze the results in detail and try to understand the strategies of the three groups.<sup>197</sup>

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<sup>196</sup> Of course, the “equivalents” are not BD equivalents, but English synonyms.

<sup>197</sup> For the purpose of comparison, 25 American students took the multiple choice test, too (without reading the texts nor consulting the dictionary). However, the results of this part of the study are irrelevant for the main investigation.

### General results:

- Means of correct answers: Group A (“dictionary only”) – 70%; Group B (“context only”) – 68%; Group C (“context and dictionary”) – 79.4%. Only the difference between groups A and B, on the one hand, and group C, on the other, was statistically significant.

These results show that, for a multiple choice vocabulary test, context was not more helpful than dictionary consultations; while the combination of the two types of information led to far better scores.

As to the strategies and difficulties of the three groups, I restrict myself to quoting the following remarks:

- The subjects in group A “appear to lack needed reference skills”; they “may have been hindered by the *American Heritage Dictionary’s* defining policy, a policy that depends on synonyms and phrases intended to be near-equivalents” (p. 123).
- The students in group B “do not appear to rely on the context for determining a word’s meaning to the extent they could have” (p. 125)

In a note to the last section of their report, the authors acknowledge that there was some drawback (or a “confounding factor”) in their investigation, *viz.* the possibility that the subjects, when reading the texts at home, consulted a BD; i.e. “they may have looked up the definitions at home, learned the meanings of several tested words by chance, and then achieved a better score, based on their own bilingual dictionary use at home and a good memory” (p. 136).

### Albus et al. (2001)

The authors wanted “to examine whether using a monolingual simplified English dictionary as an accommodation on a reading test with limited English proficient (LEP) Hmong students improved test performance”. The subjects were living in the US, so that for them English was an L2.

The “simplified” dictionary was *The American Heritage English as a Second Language Dictionary*.

One hundred thirty-three Hmongs constituted the experimental group, and there was a control group of 69 non-LEP students.

The task was to read two texts (containing 900 and 1,040 words, respectively), one of them with the help of the dictionary. Each of the two groups of subjects was divided into four subgroups, in which the sequence of conditions was different. Group A: T1 (= text 1) / +D (= with dictionary); T2 / -D (= without dictionary); Group B: T2 / +D; T1 / -D; Group C: T1 / -D; T2 / +D; Group D: T2 / +D; T1 / -D.

After reading, the subjects took a multiple choice test, which consisted of 10 questions addressing “both literal and inferential comprehension”.

During the task, the “staff recorded start and finish times on the test covers at the end of each half of the test while providing and removing dictionaries for students’ use so that the time taken by students with and without dictionaries could be tracked”. “Immediately after completion of the whole test, students were given a post-test questionnaire about dictionary use during the test, their opinions on possible usefulness of an English dictionary

on a reading test, and other background information on dictionary use and instruction in the classroom.”

The authors present a large amount of data.

General results:

- Consultations did not influence the scores.
- Even when the dictionary was available, not all subjects used it. Those Hmongs who consulted it and who, according to their auto-evaluation, were of intermediate level, achieved significantly higher scores when it was available. For those with less proficiency it was not helpful.
- Even though, on average, dictionary use did not improve the Hmongs’ performance, 95.8% opined that an MD is helpful in a reading comprehension test.

### **Ronald (2002)**

This is a report on a case study in which “a Japanese adult learner of English read a book-length English text seven times: three times without access to a dictionary and four times using a monolingual learner dictionary as she needed”. The dictionary was the LDOCE. “Before and after each reading, she evaluated her level of word knowledge for each of 300 words which appear in the text.” (p.766) Although the study was well conducted and may be interesting, I will not go into detail because there was only one subject. Ronald points to the following results (p. 770):

- “[...] for this participant, vocabulary growth did result from extensive L2 reading, both with and without the use of a monolingual learner dictionary.”
- “[...] there was a clear benefit in terms of vocabulary growth attributable to dictionary use over and above that attributable to extensive reading alone.”

## 6. Research on the use of electronic dictionaries

Sometimes lexical data bases, used in Natural Language Processing, are called *electronic dictionaries* (cf. Ranchhod & Eleutério, 1994)<sup>198</sup>. They cannot be accessed directly as reference works, and therefore are not dealt with here.

Electronic dictionaries (EDs) available for reference exist in several formats and can be accessed in various ways. There are those that can be consulted on the internet (online dictionaries)<sup>199</sup>, on CD-ROM or in hand held devices, which may be “portable dictionaries” (i.e. nothing else but dictionaries), calculators or cell phones.

These EDs are, to a certain extent, similar to print dictionaries, insofar as they present entries. One well-known difference is that the user just has to type the word sought (or click on one in a list). Many EDs present practically the same entries, or the same information, as print dictionaries, while in others the entries have quite a different format.

Several authors (e.g. Leffa 1993, Laufer 2000) include in the category of electronic dictionaries a type of information source which should really be referred to as *electronic glosses*. Even though they are not actually dictionaries, studies on their use are included in this chapter (in 6.1). The difference between electronic glosses (EGs) and EDs is that one does not even need to type in a word. It is sufficient to click on a word – or pass the cursor over it – and the word meaning or equivalent appears, consistent with the context.<sup>200</sup> The same occurs when “scanning” a text with so-called “quickionaries”, “quicktionaries” or “reading pens”.

A certain number of studies have been carried out on the use of multimedia in FL learning<sup>201</sup>. Frequently glosses or glossaries are one component of the multimedia, which is why their use was investigated as well. However, I cannot summarize all these studies, and shall restrict myself here to Chun & Plass (1996) and Lomicka (1998), as examples.<sup>202</sup> Certain other pieces of research and their findings are mentioned in Lomicka (*ibid*: 42 f.).

<sup>198</sup> Another term commonly used is *lexicon*. For example, Boguraev & Briscoe (1989: 1) assert at the end of the 1980s that “until very recently dictionaries (or lexicons, as linguists usually call them) for natural language processing systems have by and large been the poor sisters of computational linguistic research”.

<sup>199</sup> In one sense, *online* (or *on-line*) means “electronic” or “on computer”; but I use the word only in the other sense, meaning “available on the internet”.

<sup>200</sup> In some software applications, it is not the relevant information, but rather a whole entry that appears. In these cases, I consider the software an ED, since the user has to search for the correct meaning, just as in EDs or in print dictionaries.

<sup>201</sup> Cf. e.g., the articles published in *Language Learning and Technology*, available on the internet (<http://llt.msu.edu/archives/default.html>).

<sup>202</sup> In Hill & Laufer’s (2000) study, the only multimedia feature was a link to pronunciation files.

The two subchapters of this chapter are not subdivided into studies on actual use and studies on its effects, as in 5.1 and 5.2, or according to circumstances of use, as in chapter 4. As will be seen, most researchers have investigated the *effects* of the use of EGs or of EDs.

## 6.1 The use of electronic glosses

As in the case of medieval interlinear (and other types of) glosses, electronic glosses (EGs) are annotations (definitions, explanations or equivalents) added to texts, with the aim of facilitating comprehension (or even translation).<sup>203</sup>

### Blohm (1982)

[Roby (1999: 97)]

This study, perhaps the first on the use of EGs, was briefly summarized by Roby (1999: 97):

Blohm (1982) conducted an early study of online glosses. He set out to discover whether gloss paraphrases [i.e. EGs] could help students understand a passage that they were reading on a computer. He also sought to determine whether the number of glosses activated would influence the amount of recall. He found that subjects in the gloss conditions recalled significantly more than subjects in the control treatments who had no access to glosses.<sup>204</sup>

Roby criticizes the fact that Blohm did not measure – or did not reveal – the influence of the use of EGs on the duration of reading.

### Leffa (1991, 1992, 1993, 2001)

In several articles, the author deals with the problems related to the use of print dictionaries during FL reading, and describes a software developed by himself. In his 1992 paper he uses the expression “electronic glossary”, but in 1993 he calls the software an “electronic dictionary”. It is true that the software is based on a dictionary, as explained in Leffa (1993: 21)<sup>205</sup>, but for the user only glosses are made available, i.e. he or she just needs to rest the cursor on a word (or idiom) to be given the translation.

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<sup>203</sup> Roby (1999), who presents a comprehensive introduction to the topic *electronic glosses*, considers also explanatory images, audios or videos as glosses.

<sup>204</sup> Apparently the subjects read an L1 text, since Roby remarks before his summary that Blohm’s study offers “additional insights” into the use of glosses in L1 reading.

<sup>205</sup> “The program allows for any text file to be read on the screen, using a previously prepared dictionary.”

In Leffa (1991, 1992, 1993), the author reports on a study which aimed at investigating the effectiveness of this software, or, more exactly, of EGs, in reading comprehension.

The subjects were 20 Brazilian pre-intermediate students of English.

They read two texts, of approximately 100 words each. In the case of one text, they could consult a common BD, while in reading the other one they had access to the EGs. For each student, the texts had been selected randomly from five journalistic texts of similar size and level of difficulty.

Subjects were asked to translate the texts into Portuguese, their L1, since the researcher defined comprehension “as the ability to recover idea units in a translation task” (Leffa 1992: 70). “Time was explicitly controlled but there was no pressure to hand in the tests” (*ibid*). The translations were rated separately by two scorers.

Results:

- With the help of the EGs, the subjects understood on average 86.1% of the text; and with the aid of the BD, only 62.7%. The difference is statistically significant.
- The translation took on average 13.05 minutes in the first case (EGs) and 19 minutes in the second case (BD). Again the difference is significant.

### **Roby (1991)**

[Roby (1999)]

This study is summarized by Roby (1999), as follows:

I conducted an empirical examination of dictionary and gloss use by American university students of Spanish. Their task was to read a biographical sketch taken from a Spanish language feature magazine. A 2 (presentation mode) x 2 (semantic support) experimental design was used. The presentation modes were paper and computer. The two types of semantic support were dictionary alone and dictionary + glosses. The four treatment groups were (a) paper dictionary, (b) paper dictionary and glosses, (c) computer dictionary, and (d) computer dictionary and glosses. The computer dictionary contained entries taken from the paper dictionary. The glosses were written by me for the purpose of the study. The online groups accessed the semantic support(s) by mouse clicks. The dependent measures were reading time, number of queries (i.e., lookups), and comprehension. The subjects also completed a brief questionnaire concerning their normal reading and dictionary practices, and they were asked to express their opinions about the presentation modes and comprehension aids they used in this study.

Results (according to Roby, 1999):

- “[...] subjects in dictionary + gloss conditions read the passage in significantly less time than those in the dictionary-alone treatments.”
- “[...] subjects in the computer conditions looked up significantly more words than subjects in the paper conditions.”
- “There were no differences detected between the groups on the comprehension measure.”
- “Qualitative data from a post-experimental questionnaire indicated that subjects in the computer treatments were more satisfied with the semantic support available to them than were subjects in the paper conditions.”

### **Black et al. (1992)**

[De Ridder (2000: 125 f.)]

This investigation, which consisted of five studies, is mentioned several times by De Ridder. Here are most of her remarks:

[...] a study by Black [et al.] (1992) indicated that readers use electronic definitions [i.e. glosses] only for short-term purposes and that long-term retention is almost non-existent.

A study by Black et al. (1992; similar but separate from the one mentioned above), involving 20 subjects, suggested that if the glosses are indicated by a small black spot, displayed as a superscript immediately after the glossed word, it increases the students' willingness to consult this gloss.

[...] another small-scale study by Black et al. (1992) could not establish that the involvement of a particular reading task (reading for gist or for detailed knowledge acquisition) differentiates the readers' clicking behaviour. The five studies by Black et al. (1992) reported on in the single article relate to first-language technical-vocabulary acquisition.

### **Hulstijn (1993)**

Some of the authors who have mentioned this study assert that Hulstijn investigated dictionary use, but he does not use the word *dictionary* when reporting on his investigation. He only employs the terms *look-up*, *consultation* and *translation facility*. Only when discussing the problems of inference does he recommend that students be taught to "check the correctness of their inference, in cases of doubt, by consulting a dictionary" (p. 142).

Hulstijn wanted "to assess the influence of some task variables on FL readers' look-up behaviour" and "to determine the relationship between word look-up behaviour on the one hand and two learner variables on the other: readers' FL vocabulary knowledge and their ability to infer the meaning of unfamiliar words from information contained in the context" (p. 140).

The subjects were 82 Dutch high school students who had had four or five years of instruction in EFL. Two tests measured their vocabulary knowledge and their ability to make inferences.

As to EGs and the use of a computer, Hulstijn provides the following explanation:

The text which the subjects in this study read was available not only on paper but also on the screen of a personal computer. If readers wanted to know the meaning of a difficult word in the text, they moved the cursor to the desired word and pressed the Enter key. A window opened showing the word's translation in the subjects' first language. Pressing the Enter key again made the window disappear. The computer registered subjects' look-up actions by composing log files. Subjects were not told in advance that the computer registered their actions. (p. 139)

The researcher carried out two experiments.

#### First experiment

Forty-four of the 82 Dutch high school students were asked to read an English text consisting of 772 words, 109 of which were infrequent. For these supposedly unfamiliar words, "the translation facility was available" (p. 140). The 44 subjects had been randomly

assigned to two groups of 22: one was to write a summary of about ten lines, while the other was to answer twelve comprehension questions.

Results:

- “No significant differences were found between the mean scores of the summary [...] and the question group.” (p. 141)
- As to consultations, there were “enormous individual differences in the use of the translation facility”, but contrary to the researcher’s expectations, the summary group did not consult fewer words than the question group. Hulstijn thinks that this “is probably due to the fact that the text contained a somewhat mysterious story” and that subjects in the summary group “may have had difficulty establishing which facts were and which facts were not relevant for a global summary” (ibid).

### Second experiment

The aim was to investigate “whether the relevance and the inferability of words in the text to be comprehended would influence subjects’ look-up behaviour” (ibid).

In the text used in the first experiment, 16 words (apparently belonging to those for which the EGs were available) were replaced by invented “pseudo-words”. Hulstijn “chose the eight [more] relevant and the eight [less] relevant words in such a way that the meaning of four words of each group could easily be inferred, whereas the meaning of the four remaining words could not easily be inferred” (p. 142).

The subjects were the remaining 38 of the above-mentioned 82 Dutch high school students. They were asked to answer eight comprehension questions.

Results:

- “[...] relevant words were substantially and significantly more often consulted than irrelevant words” (p. 144).
- There was no significant difference in the number of look-ups of easily and not easily inferable words.

Taking into account the results of the tests on vocabulary knowledge and inferring ability, the author concludes:

[...] whereas the decision to look up the meaning of a word in a FL text is clearly influenced by the perceived relevance of the word, it is only modestly influenced by the reader’s vocabulary knowledge, and it is not influenced by the reader’s ability to infer word meanings from contextual information.

He recognizes that further research would be necessary to verify “whether these conclusions can be extrapolated to other types of FL learners” (ibid).

### **Lyman-Hager et al. (1993)** [Lomicka 1998: 42]

This study is mentioned by several authors. Although the researchers used a multimedia program, the glosses seem to have been common (i.e. written) EGs. Lomicka provides the following summary:

Lyman-Hager et al. (1993) examined vocabulary acquisition and student glossing choices for intermediate level students studying French. Lyman-Hager et al. concluded that students who worked with the multimedia program based on an excerpt from the story by F. Oyono, *Une Vie de Boy*, were better able to retain vocabulary words than students who worked with non-computerized text. Two conditions were used in this study: computerized reading and non-computerized reading. Both groups had access to glosses; the computer group had access to multimedia annotations while the text group could consult printed text with the same glosses. Immediately after reading the text, the subjects were asked to perform a written recall protocol.

### **Chun & Plass (1996)**

The authors investigated the use of multimedia in FL reading. I will summarize only the part concerning EGs (which Chun & Plass call “annotations”).

The subjects, 160 Americans, were using *CyberBuch*, “a multimedia application that provides students reading German texts with (a) at the macro-level, a visual advance organizer to facilitate global comprehension in the form of a video clip; and (b) at the micro-level, a variety of annotations for individual words in the form of text, graphics, video and sounds” (p. 503).

The investigation was carried out three times, with different groups of second-year university students of German, consisting of 36, 103 and 21 subjects, respectively.

After assisting the video clip, i.e. the “visual advance organizer”, students had to read a text in which there were EGs for 82 of the 762 words. All EGs showed verbal definitions in German and/or English, and some of them also pictures or videos. “In order to look up a word, students clicked on the word and held the mouse button down. Icons appeared above the text indicating the type of annotations available [...]. Students then dragged the word to the icons and dropped it on the icon representing the desired annotation.” (p. 510).

After reading, the students took a vocabulary test on 36 of the words for which EGs existed. One third of these EGs contained only a definition, another third a definition and a picture, and the last third a definition and a video.

Then students were asked “to write recall protocols in English, summarizing everything they could remember about the story”. “The authors independently listed the main idea units or propositions of the text”, and “a point was given for each of the propositions that was mentioned” (p. 511).

“Study 1”, with the first group of subjects, was considered a pilot study, after which one part of the test was improved.

Most of the data shown by the authors are from “Study 2”, in which the largest group of students (i.e. 103) took part.

Results:

- “[...] propositions that contained words with only verbal annotations had the lowest means, while those propositions containing words with no annotations had significantly higher means, and those with words annotated both visually and verbally had yet significantly higher means” (p. 515).<sup>206</sup>

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<sup>206</sup> “A possible explanation for why providing no annotations appear [sic] to be better than providing verbal-only annotations is that the propositions that were simpler in terms of content did not contain complex or abstract words that require explanations or annotations.” (*ibid*)

- There was no significant correlation “between the total number of words looked up and the number of propositions listed in the recall protocols” (*ibid*).
- “[...] higher scores on the vocabulary test were reflected in a greater number of propositions” (p. 516).

It should be noted that the subjects’ proficiency in German had not been measured. As to the vocabulary test taken after the reading (and possible look-ups), the authors do not inform whether the type of “annotation” had any influence.

### **Lomicka (1998)**

Like Chun & Plass (1996), the author wanted to investigate the effectiveness of multimedia glosses, which she divides into “traditional” or “limited” glosses (providing verbal FL definitions and L1 equivalents) and “extended” or “full” glosses (in which images, references, questions and pronunciation have been added).

The subjects of this study (called the “pilot study” by Lomicka) were 12 “native English speakers between the ages of 18 and 30” “enrolled in a second semester French course” in an American university (p. 45). The author does not provide any information about their proficiency in French.

Their task was to read an excerpt of a French poem for which multimedia glosses had been worked out. Before the task they were given several explanations (e.g., about the author of the poem and the test procedure).

Lomicka used a TAP. Subjects “were asked to think aloud about whatever came to mind during their reading of the text, to vocalize which glosses they were using and justify their choice (for those using glosses), and finally to voice their understanding of each line in the context of the poem at the end of every 10 lines of the text” (p. 46 f.). “Their verbalizations were recorded on audiotapes. In addition to the think-aloud procedure, participants’ interaction with the software was logged using a tracking feature. The tracker recorded all clicks on the controls, the type of gloss used, and the amount of time subjects spent consulting each gloss” (*ibid*).

The 12 students were randomly assigned to three groups: in one of them, they had no access to glosses, in the other two they could access either “traditional” glosses or “extended” glosses.

The general results presented by the author are not very clear, and she is aware of the study’s limitations (especially the small number of subjects). Lomicka summarizes the results as follows:

- “[...] the major obstacle for this group of L2 readers may have been vocabulary. They seemed concerned primarily with an immediate construction of a textbase. While some participants consulted the English and French glosses to determine simple word definitions, others used annotations to verify hunches. Their use of the glosses was oriented toward the goal of translation and paraphrasing in order to achieve a minimal level of comprehension. This tendency is also evident in group C [which had access to the extended glosses], where tracker data indicate that even with availability of all glosses the readers chose the definition glosses first” (p. 48). “Multimedia annotations, as compared to no glosses or to traditional glosses, may have a positive effect on comprehension and on the construction of a situation model. However, students at this fluency level appear to use multimedia annotations primarily to construct a strong textbase and as a result do not fully explore the [...] resources available” (*ibid*).

### Nagata (1999)

The subjects were 26 students “taking the second semester Japanese course at the college level” (p. 3), probably in San Francisco. Twenty-four were native speakers of English, while two were Asians, but fluent in English.

Having created a software called *Banzai Readings*, the author wanted to investigate the effectiveness of two types of EGs existing in that software: one type (“single gloss”) showed only one English equivalent of a Japanese word or one translation of a grammatical structure<sup>207</sup>; in the other type, there were two equivalents or two translations between which the reader had to choose (“multiple-choice gloss”). I will use the acronyms SG for “simple gloss” and MG for “multiple-choice gloss”. In the case of the MGs, the software gave feedback on the readers’ choices (“correct” or “wrong”).

The 26 subjects were randomly assigned to two groups of 13, having access to the SGs and to the MGs, respectively. A vocabulary and a grammar pretest showed no significant difference in their proficiency in Japanese.

Their task was to read a Japanese text of 260 words on the computer screen. They “were told that they would be asked about the content of the text later, but they were not informed that post-tests would be given regarding the new words and structures” (p. 5 f.). In the text, twenty target words and the three grammatical structures (cf. footnote in this summary) were underlined. They occurred with different frequencies (between one and seven times). For each group of subjects, one type of gloss for these target words and structures was available.

“Immediately after the computer session, a vocabulary post-test and a grammar post-test were administered, which were identical to the pretests.” (p. 6) One month later, the students took a retention test on the same target words and structures.

#### Results:

- In the posttest, the MG group obtained significantly higher scores than the other.
- In general, the scores were higher in the case of target words and structures that occurred more frequently in the text.
- In the retention test, there was no significant difference between the groups in the case of words, but the MG group fared significantly better in the case of structures.
- Understandably, “the mean scores on both vocabulary and grammar retention tests for both groups were dramatically reduced from those on the post-tests” (p. 8 f.).

### Laufer (2000)

The author wanted to compare the effectiveness of two types of glosses, marginal glosses in a printed text and EGs, for word retention, or “vocabulary acquisition”.

Fifty-five advanced university learners of EFL in Israel were asked to read a text of 621 words and to answer ten comprehension questions. In the text, 10 infrequent words and expressions (selected in a pretest) were highlighted. For these target items, glosses were available.

“After the completion of the task, the work sheets were collected and the students were unexpectedly given a list of the ten target words and asked to provide the L1

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<sup>207</sup> These “grammatical structures” are expressions translated as *because*, *with* and *as much as*.

equivalents or English explanations for these words. Two weeks later the same test was repeated.” (p. 851) Laufer characterizes the two tests as “immediate recall” and “delayed recall”. I will use the acronyms RT1 (recall test 1) and RT2, respectively.

The researcher had formed two groups: 31 subjects read the text printed on a sheet of paper (with marginal glosses which showed only L1 equivalents), while 24 students read the text on a computer screen.

When these 24 participants clicked on one of the highlighted target words, “a window appeared on the screen with 3 options: translation, definition in English, examples of usage” (p. 850). In practice, they selected only three look-up patterns: L1 equivalent only, L1 equivalent + definition, or L1 equivalent + definition + examples.

The log files showed “which words were selected, what dictionary information was looked up, the number of times each word was selected and how much time was spent on the entire task” (p. 851).

For correct responses, 2 points were given, for semantically approximate responses, 1 point.

Results regarding word retention:

- In both posttests, the EGs led to significantly higher scores than the marginal glosses. Mean scores in RT1: 17.52 vs. 3.87; in RT2: 4.8 vs. 0.88.
- The 17 students (of the EG group) who consulted only the L1 equivalents obtained slightly lower scores than those who also consulted the other types of information, but they fared much better than the subjects of the other group, for whom the same L1 equivalents were available in the marginal glosses (RT1: 14.59 vs. 3.87; RT2: 3.82 vs. 0.88).
- A comparison of the effectiveness of look-up patterns showed that only in RT2 were the scores “significantly higher when a combination of translation, definition and example [was] selected” (p. 852). However, these data are based on very few occurrences of this look-up pattern.

Laufer explains the better results obtained with EGs as follows:

One reason may have to do with the visual impact produced by a word which embedded [*sic!*] in a window and appears in a prominent position on the computer screen. [...] Another explanation relates to the ‘involvement hypothesis’ proposed by Laufer and Hulstijn [...]. The hypothesis states that tasks which create a need for a word, elicit search for its meaning and ‘evaluation’ (decision involving processes of selection and combination) will have a better effect on the retention of the words than tasks which do not induce the three above mentioned elements of involvement. [...] The computer group [...] was actively involved in searching for the meanings of the target words. (p. 852 f.)

## **Laufer & Hill (2000)**

This article reports on a study oriented by Laufer and carried out by Hill, as part of her PhD thesis. The researchers intended to answer the following questions: “1. What percentage of words are remembered after being looked up in an electronic dictionary during a reading task? 2. Are different lookup preferences associated with different levels of retention? 3. Is there a relationship between the number of lookups and retention?”

The software used, characterized as a “CALL dictionary” (CALL = computer-assisted language learning), was entitled “Words in Your Ear”. “The programme consists of four parts: (a) a pre-test of the words targeted for investigation, (b) a text where these words

appear highlighted, (c) dictionary information for each word in the form of five options (meaning in English, translation into L1, word pronunciation, root and "extra" information), and (d) log files where every mouse click selecting from these options is recorded.”<sup>208</sup>

Ninety-seven subjects participated in the study, but only 72 remained for data analysis, because fifteen already knew some of the 12 target words. Of the remaining 72, “32 were EFL students from the University of Haifa, Israel, and 40 were first year ESL students from the University of Hong Kong”. They had studied English for seven or eight years.

“Subjects were instructed to read the [120-word] text and understand it for comprehension questions that would be given at a later stage.” They were encouraged “to look up the highlighted words by clicking on them with the mouse and then choose the option(s) that would best clarify the meaning of the word in the text”.

After the reading, which was limited to ten minutes, two tests were administered: an unexpected vocabulary test on the 12 target words and a comprehension test.<sup>209</sup>

By means of cross-tabulations of log files and scores, Laufer & Hill obtained the following data: number of words looked up and types of glosses accessed; number of times certain words were looked up; number of words retained and, in each case, the types of glosses accessed; a classification of subjects according to their preference for specific types of information.

For these look-up preferences, I will use the following abbreviations (which refer to the type of information consulted): L1 = L1 equivalent; L2 = L2 (English) definition; L1/L2 = sometimes L1 equivalent, sometimes L2 definition; P = L1, L2 or L1/L2 plus some other information.

#### Results:

- Preferences varied among subjects, but there was a certain look-up pattern in each group. The Israelis preferred L1 (76%); only 16% opted for L1/L2, and 6% for L2 or P. The preferences of the Chinese students were as follows: P – 35%; L2 – 32.5%; L1/L2 – 17%; L1 – 12%.
- As to the relation between look-up pattern and word retention, the Israelis obtained the best results (retention of 45% of the target words) with L1/L2 (although they preferred L1), and the second best (38%) with L1. The Chinese scored highest when looking up the following types of information: L2 – 69%; L1/L2 – 66%; P – 60%; L1 – 37%. The authors offer the following explanation for the fact that they retained on average more words than the Israelis: the Chinese spent more time on reading and consultations (10 minutes vs. 5-6 minutes among Israelis).
- Considering the two groups together, the highest retention scores were obtained with the L1/L2 look-up pattern.
- There was no significant relation between numbers of look-ups and retention.

#### De Ridder (2002)

The author intended to find out whether “the fact that hyperlinks with dictionary definitions are visible (i.e., highlighted) or invisible affect[s] the foreign language learner's

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<sup>208</sup> I do not take the software as an ED, since subjects did not need to look up whole entries and choose the correct sense. There were only different types of glosses for the appropriate sense of each target word.

<sup>209</sup> The authors do not mention the fact that this test, which apparently served only as distractor, was not evaluated.

look-up behaviour and as a consequence the possible learning outcome” and “whether the type of reading task (general vs. specific) affects the learner’s use of these links and the amount and quality of the language learned” (p. 123).

The subjects were 60 Dutch “second-year economics students” with “a fairly advanced level of French (9 years of French as a foreign language)”. They were randomly assigned “to two groups of 30 students each, one with a general reading task, the other with a specific reading task”. They “read two glossed French economic texts, comparable in length (about 2,000 words each), grammatical difficulty, and vocabulary load” (p. 128). In each text (available on the computer screen), 5-6% of the words – among them four “non-existent”, invented or artificial words – were glossed.

A click on the EGs opened a pop-up window which showed the Dutch equivalent and a French definition. In only one of the texts were the EGs visible (highlighted, marked in blue and underlined). The order in which these texts were read obeyed a “Latin-square design” (p. 128); i.e., each of the two groups of subjects was subdivided so that four groups of seven or eight students read the two texts (T1, T2) in the following order: a) T1 with marked EGs, T2 unmarked; b) T2 marked, T1 unmarked; c) T1 unmarked, T2 marked; c) T2 unmarked, T1 marked.

“All students participated in three individual sessions. Each session was concluded with a small interview and some general questions. Before reading, the students received a general technical explanation (on how pop-ups work, etc.)” (p. 130).

The actions of the group that received the “general reading task” are described by the author as follows:

In the first session, the students of this particular group read one of the two texts in one of the two conditions, took a test on text comprehension and completed an unexpected vocabulary test. In the second session, they started with the delayed vocabulary test of the text of the first session, read the other text in the other condition, took a test on text comprehension and finished with a vocabulary test. The delayed vocabulary test of the second session took place in a brief third session.(*ibid*).

As to the other group, De Ridder explains:

In the first session, the students of the specific reading task group started with a search-and-find task of one of the two texts, in one of the two conditions. Afterwards, they read the text in question, performed a free recall and took an unannounced vocabulary test and an announced comprehension test. In the second session, they took a delayed vocabulary test of the first text and read and completed the tasks of the second text. The delayed vocabulary test of the second session took place in a brief, third session (p. 131).

The search-and-find task [...] contained four questions where one or more items had to be found: three questions could be found literally in the texts, and for the fourth one, the students had to establish a relationship between information contained in two (not necessarily consecutive) paragraphs (p. 130).

To establish a possible difference in the students’ concentration during the reading of the marked versus unmarked text, a small attention test for the group of the specific reading task was incorporated. During the online reading sessions, a red rectangle (4 to 3 cm, java-script) randomly appeared (with a maximum of 5 times in the 25 minutes of reading time). The students were explicitly asked to click on it as fast as possible in order to make it disappear. I expected that the longer it took the students to react, the higher their concentration level was and the higher their interaction level with the text they were reading (*ibid*).

The comprehension test consisted of eight multiple-choice questions and thirteen open-ended questions.

In the unexpected vocabulary tests, subjects were tested on 38 items. The delayed test took place one week after the reading.

The reading sessions were registered in log files, and subjects were videotaped during the task.

De Ridder shows a large amount of data, which unfortunately cannot be presented here. I must restrict myself to her summary of the results:

- When foreign-language learners read a text where the link with the gloss is visible (highlighted), they are more willing to consult the gloss. However, this increased clicking does not slow down the reading process, nor does it increase the vocabulary learned incidentally. On the contrary, when reading a text in a condition with invisible links, the students' clicking will be less excessive and better determined, leaving room for context derivation, which, in the long-term however, does not particularly have a positive effect on vocabulary learning. The fact of highlighting or not highlighting the hyperlink does not have an impact on text comprehension either. Apparently, the readers seem to adapt their reading strategies and vocabulary learning strategies to the screen-situation they are confronted with. The reading task then does not alter the clicking behaviour of the students since they still click considerably more when visible links are presented, even when carrying out a specific reading task. However, the reading task did influence the students' vocabulary learning: A content-oriented reading task seems to decrease the reader's attention for vocabulary.

### **Ernst-Martins (2003)**

In her master's dissertation, the author wanted to verify the effectiveness of the same software Leffa (1991 ff.) had used in his study. However, in her investigation the FL was Spanish, and she intended to compare the effectiveness not only of the software (i.e. the EGs) and of a BD, but also of an MD.

The subjects were 15 Brazilian university students who were in their first semester of Spanish and, therefore, beginners. It should be explained that Spanish and Portuguese, their L1, are very similar, so that certain sentences can be understood without difficulty.

The 15 students, who were assigned to three groups of 5, read three texts of different levels of difficulty. Each group used a different dictionary type for each text; i.e., the MD was used for text 1 by group A, for text 2 by group B, and for text 3 by group C; the BD was used for text 2 by group A, for text 3 by group B, and for text 1 by group C, etc.

Subjects were asked to translate the three texts. The translations were rated by another teacher, who gave them from 0 to 10 points. The duration was also measured.

The author analyzes in detail the data obtained, relating the three groups' scores to the level of difficulty of the texts and the time taken.

General results:

- The mean scores were relatively high (over 8.43), which is why the author believes that all types of dictionaries were helpful for text comprehension.
- The EGs helped more than the print dictionaries, but the differences were not significant. The MD was the second most helpful source of reference.
- Using the software, the subjects took a little less time than with the BD and much less than with the MD.

### Hill & Laufer (2003)

In the title of this article, reference is made to electronic dictionaries, but already in the abstract it becomes clear that it was glosses that were involved: “the words could be looked up in electronic glosses”.<sup>210</sup>

The aim of the study was “to find out whether task type affected incidental vocabulary acquisition and, if it did, to explain why such effect occurred”.

The authors claim that “the more operations learners perform on a word, the better their retention will be” and that “during reading, such operations may take the form of dictionary activity”.

Ninety-six (initially 128) “second language learners of English whose mother tongue [was] Cantonese or Mandarin”, roughly twenty years old, took part in the study. They “were enrolled on English enhancement courses in the English Centre at the University of Hong Kong”; their proficiency corresponded to a TOEFL score of about 550.

The reading text was a short passage of 165 words “written for the purpose of the experiment”. The authors assumed (and later verified) that 93% of the words were familiar to the students. A pre-test showed that the 12 selected target words – four nouns, four adjectives and four verbs – were unknown to them.

Subjects were randomly assigned to three groups. Apart from the reading (on the computer screen), a different task was given to each of the three groups.

Task 1 (“message-oriented”): subjects were “required to answer 12 yes/no comprehension questions, each question on a different portion of the text containing one target word”.

Task 2 (“form-oriented comprehension task”): “the target word appeared on the screen and the learners had to select its meaning from 4 options”;

Task 3: (“form-oriented production task”): “the synonym or paraphrase of the [target] word was provided and the learners had to select its corresponding word form from 4 options which consisted of the correct target word and 3 distracters selected from the 12 target words”; for example, one target word was *affability*, there was the question “Which word means *friendly nature*?”, and students had to choose the correct answer among four options.

A computer program was designed especially for the study. On the screen, it showed the reading text and four buttons, each of which led to one of four different information types about each target word: a) English definition; b) Chinese equivalent; c) “part of speech, the preposition that follows a verb and an example of the use of the word in a new context”; d) pronunciation.

Immediately after the task, an unannounced vocabulary test was administered, which was repeated one week later. Subjects were asked to provide the meaning of the twelve target words in English or Chinese.

Results regarding the influence of the tasks:

- Performance on the vocabulary tests:
- Task 3 yielded the highest retention scores in both tests, while task 1 resulted in the lowest scores; in the first test, the difference was significant. There was no significant difference between tasks 2 and 3 or between tasks 1 and 2.

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<sup>210</sup> I cannot indicate the page numbers of the quotations because my summary is based on the file Batia Laufer kindly sent me.

- Time spent on task: no significant difference between the three tasks.
- Number of look-ups: task 1 provoked significantly fewer look-ups than the other two tasks; the difference between tasks 2 and 3 was not significant.
- Type of information sought: in task 3, most students preferred the Chinese equivalent; in tasks 1 and 2, the English definition.

After some tentative explanations of the results, Hill & Laufer assert:

We found that the two form oriented tasks were more effective for vocabulary learning than the meaning oriented task. The production task yielded the best results. There was no significant difference in the time that was necessary to complete the tasks. Hence the different effectiveness of the tasks could not be attributed to time on task. The tasks were different in the amount of dictionary activity they provoked. The order in effectiveness (task 1 - the worst, task 3 - the best) was the same as the order in the dictionary activity. Task 1 provoked the lowest activity, task 3 - the highest. We conclude, therefore, that an important factor determining task effectiveness for vocabulary learning is the amount of word-related activity that the task induces.

### **Yoshii (2006)**

The subjects of this study were 195 Japanese learners of English. The abstract of the report, available on the internet, reads as follows:

This study examined the effectiveness of L1 and L2 glosses on incidental vocabulary learning in a multimedia environment. The investigation included the effects of additional pictorial cues in L1 and L2 glosses, and how these additions affect vocabulary learning. The analyses of a mixed design repeated measures 2 (L1, L2) X 2 (picture, no picture) X 2 (immediate test, delayed test) analysis of variance (ANOVA) indicated no significant differences between L1 and L2 glosses for definition-supply and recognition tasks and showed significant differences between picture (text-plus-picture) and no-picture (text-only) glosses for definition-supply test only. The results also revealed significant interaction effects between languages and tests indicating that L1 and L2 groups showed different patterns of vocabulary retention over time. Findings suggest that both L1 and L2 glosses are effective for incidental vocabulary learning, but long-term retention may differ between the two types; and that the effect of additional visual cues on vocabulary learning may rely on the nature of the tasks given.

### **Peters (2007)**

In this study, EGs were used, as can be seen in the sentence “When clicking on a word, a pop-up window with a German definition and a Dutch translation would appear [...].”

Since the report is available on the internet, I only quote the abstract:

This study explored the effect of two enhancement techniques on L2 learners' look-up behaviour during a reading task and word retention afterwards amongst Flemish learners of German: a Vocabulary Test Announcement and Task-induced Word Relevance. Eighty-four participants were recruited for this study. They were randomly assigned to one of two groups: 1) not forewarned of an upcoming vocabulary test (incidental condition) or 2) forewarned of a vocabulary test (intentional condition). Task-induced Word Relevance was operationalized by a reading comprehension task. The relevance factor comprised two levels: plus-relevant and

minus-relevant target words. Plus-relevant words needed to be looked up and used receptively in order to answer the comprehension questions. In other words, the reading comprehension task could not be accomplished without knowing the meaning of the plus-relevant words. The minus-relevant target words, on the other hand, were not linked to the reading comprehension questions. Our findings show a significant effect of Test Announcement and Word Relevance on whether a target word is looked up. In addition, Word Relevance also affects the frequency of clicks on target words. Word retention is only influenced by Task-induced Word Relevance. The effect of Word Relevance is durable.

### **Yanguas (2009)**

This report on a study of the effect of EGs (more exactly, of multimedia glosses) is available on the internet, which is why I only quote the abstract:

The present study investigates the effects that different types of multimedia glosses, namely textual, pictorial, and textual + pictorial, have on text comprehension and vocabulary learning when the goal is exclusively comprehension of a computerized text. This study is based on the theoretical framework of attention, which maintains that attention is critical in the acquisition process of an L2 [...]. Ninety-four participants read a text under one of four gloss conditions while asked to think aloud. This study investigated whether any of the conditions promoted noticing and whether this noticing led to better comprehension of the text and learning of the target vocabulary words. Reading comprehension, recognition, and production measures were utilized in a pre-post test design. Results of quantitative and qualitative analyses of the data gathered showed first that all multimedia gloss groups noticed and recognized significantly more of the target words than the control group. Second, no significant differences were found among any of the groups in production of the target vocabulary items. Finally, regarding comprehension, results showed that the combination gloss group significantly outperformed all other groups. These results confirm that the multimedia glosses under investigation have a different effect on comprehension and vocabulary learning respectively.

## **6.2 The use of electronic dictionaries**

While EGs immediately provide users with the information they need (mainly definitions and/or equivalents), in EDs they not only must type the word they want to look up (or choose it from a list, but also – at least in the numerous cases of polysemous words – select the right sense, as in paper dictionaries).

There is a broad literature on EDs. Frequently, authors write about their preparation. As to articles on the facilities and shortcomings of existing EDs, the papers written in English by Nesi (1996a), Winkler (1998), Nesi (1999b), Leech & Nesi (1999), Campoy Cubillo (2004) and Tono (2004) should be mentioned. Of course there are also works written in other languages, for example a very good overview of internet dictionaries by Storrer & Freese (1996), and the more detailed PhD thesis by Petelenz (2001), both in German. More recent papers are to be found in Bergenholz, Nielsen & Tarp (2009), and in Nielsen & Tarp (2009).

In this section I summarize reports on the use of electronic dictionaries that come with the hardware or are available on the internet.

### Krantz (1991)

This researcher was the first to make use of computerized dictionaries, which were then print dictionaries available on computer. Since she was mainly interested in the effects of dictionary use on vocabulary learning, her report is summarized in 4.4.

As was said there, Krantz describes the look-ups as follows: "When a word that the reader wanted to look up appeared in the text, he typed the word on the terminal key-board. After about 3 seconds the dictionary article, or if it was a long one, the first part of it, was displayed on the screen for 10 seconds. [...] If the reader was not able to read the article within the 10 seconds, or to understand the content of it, he was to press a key on the key-board, and the same article was displayed again" (p. 44).

### Aust, Kelly & Roby (1993)

Apparently the authors wanted to prove the advantages of hypertext. As their type of text, they chose the dictionary, because it is used by so many people and "because the searching advantages of hypertext adaptations are especially evident with large modular references" (p. 64). They compared not only a conventional dictionaries to EDs, but also BDs to MDs. Thus, look-ups were observed in four types of dictionaries: BD, MD, BED (bilingual ED), and MED (monolingual ED).

The subjects were 80 American undergraduates "enrolled in sections of a fifth-semester university Spanish course" (p. 66).

They were asked to read a 420-word Spanish article – considered "moderately difficult" for them – and, after reading, to write, in English, everything they could remember of the content. The researchers "used a proposition recall protocol to measure comprehension". "A proposition was defined as a unit of meaning expressed in the form of a simple declarative sentence." (p. 67)

Subjects "were randomly assigned to one of the four treatment conditions" (ibid). The "conventional dictionary" groups read a paper version of the article and could consult either a BD or an MD. The ED groups read the article on the computer screen and "could consult definitions [or equivalents] for any word in the electronic [article], and after clicking on a word, the definition [or equivalent] window immediately appeared on the page opposite from the selected word" (ibid).<sup>211</sup> In these cases, the entries were based on a conventional BD and MD, respectively. "To maintain format and size consistency across all conditions, paper copies were made from screen files of the electronic [article]." (ibid) Those students who were to use the EDs were instructed how to use them, and the others were requested to underline the words they would look up. The consultations in the EDs were recorded by the computer.

All data were analyzed statistically.

Results:

	BED	MED	BD	MD
Number of look-ups	33.20	23.30	14.05	12.15
Time spent for reading and	17.46	20.13	19.73	26.90

<sup>211</sup> The authors employ only the word *definitions*, but in the case of BDs the usual term is *equivalents*.

consultations (in minutes)				
Consultations per minute (= "efficiency")	1.84	1.15	0.75	0.49
Number of propositions recalled (= "comprehension")	11.80	10.10	13.10	12.20

- The bilingual dictionaries were not only consulted more frequently than the monolingual ones, but were also more effective (in global time spent for reading and consultations, look-ups per minute and number of propositions recalled).
- The same is mostly true for the EDs in comparison to the paper dictionaries. Only in the case of "comprehension" (i.e. number of propositions recalled) were they worse.<sup>212</sup> The "efficiency gains of hyper-reference over paper were more pronounced with the bilingual dictionary" (p. 69).

### **Guillot & Kenning (1994)**

[Winkler (1998)]

Winkler (1998) writes the following about this investigation:

It seems, however, that multimedia products can be extremely motivating for language learning and this is also expressed in the study on the use of the Robert Electronique by Guillot and Kenning. They found that their students showed "increased capacity for sustained effort" (1994:65) when working with this computer-based dictionary as it encouraged browsing and hence vocabulary acquisition:

Students spontaneously looked up a number of unknown or unclear words, not just in cases where the task made it necessary ... but also simply out of curiosity ..., they subsequently commented on how easy and satisfying it was to do so, and added that they would never have done it to anything like the same extent with a printed dictionary, if at all.

According to their survey, Guillot and Kenning also noted another positive aspect of students working with the Robert Electronique. Whereas looking up words in a print-based dictionary is mainly a private experience, students were able to work in pairs or small groups in front of the screen which also allowed the teacher to monitor this process. Thus, dictionary consultation became much more visible and open to discussion.

### **Knight (1994)**

Although in this study a computerized dictionary was used, the report is summarized in 4.4, because Knight was mainly interested in the effect of dictionary use on vocabulary learning.

As was said in 4.4, the entries in the computerized dictionary were based on two print BDs. The author explains that the consultations "simulated actual dictionary use in two ways: manner of look-up and type of definition provided"; subjects "first pressed the designated lookup key on the computer and then typed the root form of the Spanish word in the box" (p. 290).

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<sup>212</sup> In order to defend the EDs, the researchers assert that the differences in comprehension were not significant and that "[m]ore conventional comprehension measures, such as multiple-choice questions or sentence-completion tasks, may demonstrate different learning advantages of hyper-references" (p. 70).

### **Nesi (1994)**

In this study a computerized dictionary was used, but since the research question (“the effect of language background and culture on productive dictionary use”) had little to do with EDs, the report is summarized in 5.1.2. The computers only “monitored [the subjects’] behaviour during the task” (p. 577). The computer program was used “both to record and time instances of definition look-up, and to record the subjects’ own language production” (p. 579).

### **Nesi & Meara (1994)**

Since this study deals specifically with definitions, it is described in 5.1.2, even though a computer program was indeed used “to present the task and store the data” (p. 6). This program “recorded whether the subject looked up the on-screen definition, and how long was spent reading it” (*ibid*), as well as the sentences the subjects produced.

### **Koga (1995)<sup>213</sup>**

[Kobayashi (2006: 59)]

Here is Kobayashi’s brief summary:

Koga (1995) compared the effectiveness of an online ED and a PD for L2 reading. Forty Japanese university students were required to read six texts in three conditions (no dictionary, PD, and ED) and to answer comprehension questions. Koga found that students read faster in the no-dictionary condition than in the ED condition, and faster in the ED condition than in the PD condition. Also, for the higher-reading-ability group, the mean reading comprehension score was higher in the ED condition than in the no-dictionary condition, and higher in the no-dictionary condition than in the PD condition. There were no differences in any of the three conditions for the low-reading-ability group, possibly due to the floor effects. Koga concludes that the ED had less interference in the reading process and facilitated students’ comprehension.

### **Inami et al. (1997)<sup>214</sup>**

[Kobayashi (2006: 59 f.)]

This study is summarized by Kobayashi as follows:

Inami, Nishikata, Nakayama, and Shimizu (1997) compared a CD-ROM based dictionary and a PD in their effectiveness for learning a set of English words. Eighty Japanese undergraduate and graduate students learned either the definition or spelling of each English word by consulting a

<sup>213</sup> Kobayashi (2006) provides the following bibliographical data: Koga, Y. (1995). The effectiveness of using an electronic dictionary in second language reading. *Bulletin of the Liberal Arts of Hiroshima University*, 44, 239-244. – According to some webpages, the paper was published in the *Bulletin of the Faculty of Education, Hiroshima University. Part 2, Science and Culture*.

<sup>214</sup> Bibliographical data according to Kobayashi (2006): Inami, K., Nishikata, A., Nakayama, M., & Shimuzu, Y. (1997). Effectiveness of learning English words using a CD-ROM dictionary. *Japan Journal of Educational Technology*, 21(2), 107-117.

CD-ROM based dictionary or a PD. Then, they took two types of vocabulary tests, the tests that required supplying either the definitions or spellings of the learned words. The scores on both the tests were higher in the CD-ROM condition than in the PD condition, when students were allowed to search freely each word within the limited time period. However, there was no significant difference on the test scores between the two conditions, when students were allowed to search each word only once. When students were allowed to search freely each word, search time was reduced in the CD-ROM condition, and students were able to consult one word multiple 60 times, which may have resulted in improved test scores. Students rated the CD-ROM dictionary as more efficient for learning than the PD.

### **Tang (1997)<sup>215</sup>**

[Kobayashi (2006: 48 f.)]

Kobayashi provides the following summary:

Tang's (1997) study involved 254 Chinese students of English and 20 ESL teachers in Vancouver, Canada. Her study differs from other studies on dictionary use in that it employed multiple methods. The students' use of bilingual EDs was investigated using a survey, observations, and documents (e.g., assignments, handouts, vocabulary notebooks). Additionally, the teachers were interviewed on their perceptions on students' use of EDs. Tang found that 87% of the students owned an ED. Most of the dictionaries used by students lacked some of the ten features of a good learner's dictionary listed by Hartmann (1992), such as the provision of detailed grammatical codes, example sentences, collocational and cultural information. EDs appeared to help learners both with comprehension and production of English. Especially, those with good knowledge of their L1 and English grammar benefited the most from electronic dictionaries. Although many students found it difficult to decide on the most appropriate meaning from multiple meanings provided in the dictionary, they attempted to choose the right one by interacting with the text and using contextual cues. Students considered their EDs useful due to their portability, speed, availability of sound, and availability of their L1. In contrast, teachers exhibited concerns about their students' use of electronic dictionaries, although they saw some advantages in using them. Tang's research may suggest that EDs are not as harmful as many researchers and educators think. It also demonstrates that multiple research methods can produce more rigorous data on dictionary use than a single method.

### **Iwamoto (1998)<sup>216</sup>**

[Kobayashi (2006: 60)]

Kobayashi describes this study as follows:

Iwamoto (1998) compared the efficiency of a handheld ED with a PD for accessing the first meaning in an entry and the contextual meaning. Ten university students were asked to locate the first meaning in an entry for a set of words, using an ED and a PD. Next, they were asked to locate the contextual meaning in an entry for another set of words, using an ED and a PD. Iwamoto found that the students accessed the first meaning more than three times faster with an ED than with a PD, and that they accessed the contextual meaning more than two times faster with an ED than with a PD. Individual differences were smaller in the ED condition than in the PD condition, indicating that an ED allows efficient access to information for all students.

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<sup>215</sup> Bibliographical data according to Kobayashi (2006): Tang, G. M. (1997). EDs for second language learning: Help or hindrance? *TESOL Canada Journal* 15(1), 39-57.

<sup>216</sup> Bibliographical data according to Kobayashi (2006): Iwamoto, Y. 1998. Denshi jisho ni yoru kensaku jikan tanshoku no koka [Effectiveness of reduction of search time in using electronic dictionary]. *Bulletin of Chugoku Shikoku Education Society*, 44, 97-102.

### **Liou (2000)**

In this study on reading comprehension, “on-line logs were triangulated with off-line data”. Please see the abstract in 4.1.

### **Nesi (2000a)**

Nesi investigated “questions concerning the value and use of electronic dictionaries for learners of English”. The research questions were: “Will learners look up more words if they use such dictionaries? Are they more or less time consuming than paper-based dictionaries? Do learners like them? Are they useful for helping learners understand texts?”<sup>217</sup>

The author compared the paper OALD with the same dictionary on CD-ROM.

The task was to read two printed texts “of identical length (286 words) from the same source”.

The (main) study was carried out “after intensive piloting”.

The subjects were 29 “adult non-native speaker students” of EAP in Great Britain.

“[Each student] read two paper-based texts: one with access to the CD-ROM, and the other with access to the book dictionary. Equal numbers of subjects read each text in each condition.” Dictionary use was monitored, and a “note was made of the time each subject took to complete the experiment in each condition”. Before the task, the students received instructions about the use of the ED.

“Subjects were asked to record each look-up word and the type of information they required, and then rate on a scale from one to five the ease with which they had found this information, and their degree of satisfaction with it.”

Comprehension was measured in a test consisting of “eight true/false questions” requiring global comprehension of the text. The researcher admits that “true/false questions are not a very reliable method of testing skill proficiency”, but she asserts that “they provided sufficient information to make a broad comparison of the effect of the two dictionary formats, although they could not be relied upon to make fine distinctions between levels of reading comprehension”.

In her discussion of the results, Nesi remarks, for example, that “subjects in the computer condition looked up words that were entirely unconnected with the text and the experimental task”, and that not many of the students “recorded problems with the dictionaries”.

Main results regarding the comparison between the use of the print OALD and of its electronic version:

- “[...] differences in score, time taken and number of look-ups were not significant”, while “differences between ratings for ease of use and satisfaction were highly significant” (in favour of the ED).

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<sup>217</sup> I cannot indicate the page numbers of the quotations because my summary is based on the file the author kindly sent me.

### Tono (2000)

The author intended to investigate the effects of the use of three different types of BEDs. For “control conditions”, two paper BDs were used.

Tono characterizes the three types of EDs in the following way (p. 856 f.): (a) “traditional interface” (“information is provided in a similar way to that in a paper dictionary”: “idioms and phrasal verbs are listed after the list of translation equivalents and illustrative examples”); (b) the “parallel interface” (“all the words and phrases, including phrasal verbs, compounds, idioms and collocations, are located separately in individual entries with their translation equivalents in a parallel format”); (c) the “layered interface” (“information is organized by a tab menu”, “different information appears on a different tab sheet”).

Tono wanted to study the “look-up ease” in the use of these different types of EDs (or, more exactly, BEDs) in various language tasks, which were mainly “looking up single words and derivatives”, “looking up idioms and compounds”, “L2-L1 translation” and “L1-L2 translation” of some sentences (p. 858).

As the author admits, the number of subjects was “very modest”, *viz.* only five “Japanese EFL students studying in the MA programme at Lancaster University” participated (p. 857).

Tono proceeded as follows:

The subjects were individually asked to visit the researcher’s office and worked on the first set of tasks on paper. After the first session, each subject was asked to fill in [a] questionnaire. The following two sessions were done on the computer at one week intervals. At the beginning of the second session, the subjects were provided with detailed instructions on the use of the different electronic dictionaries. After 5-minute practice for each dictionary, they were asked to work on the tasks. (p. 858)

The consultations were videotaped. In the analysis, the author calculated the time taken and the accuracy rate for each looked-up word or phrase and for the translations.

Due to lack of space in his paper, Tono shows only a few of the many data.

Main results (according to Tono’s own summary):

- “[...] electronic dictionaries provide quicker access to the target entry than the paper medium” (p. 859).
- As to the three types of EDs, “all post-hoc test comparisons [...] found the difference between the traditional and the layered interfaces to be non-significant and the difference between the traditional and the parallel interfaces significant on every measure”; “findings suggest that the parallel interface allows faster search than the other two interfaces” (*ibid.*)
- “[...] idioms and compounds took significantly more time to look up than single words and [derivatives]. [...] The interaction of dictionary types and task types was non-significant. [...] The parallel interface seemed to be quicker in the case of complex search.” (p. 860)

Tono concludes that the “parallel interface is especially effective in the case of derivatives, idioms and compounds, which require the user’s prior knowledge of microstructure of the entry” (p. 860).

Apart from the small number of subjects, it should be noted that in this study each type of ED represented one specific dictionary, which means that with other EDs of the same type the results might be different.

### **Weschler & Pitts (2000)**

Since this paper is available on the internet, I provide only a few details.

The authors wanted to find out whether bilingual EDs are faster to use than bilingual paper dictionaries (PDs). Several first year English conversation classes in Japan were divided into two groups, one consulting EDs and the other, PDs. The number of participants is not revealed. They were shown three lists of ten words and were asked to look them up, without reading the “definitions” (i.e. the equivalents). The time taken was recorded.

Result: Students “could look up words about 23% faster with an ED”.

The authors also carried out a questionnaire survey among 88 Japanese university students who owned EDs “to find out whether students are taking full advantage of their electronic dictionaries”.

### **Lemnitzer (2001)**

The aim of the study reported in this paper was to verify, for the sake of future improvement, the use of three BDs (German-English, with 50,000 entries, and French-German as well as German-French, with 25,000 entries), which were available on the internet. The log files of two periods (April 1996 to July 1997 and January to August 1998) were analyzed.

The author shows the number of searches (which grew enormously in the second period, most probably due to the fact that more people were becoming familiar with the dictionaries), as well of successful and unsuccessful searches. The percentage of unsuccessful searches was 62.3% in the first period and 54.4% in the second. In a sample of 500 unsuccessful searches, the following problems occurred: the word was spelt incorrectly – 46.6%; the word was missing in the dictionaries – 32.8%; incorrect lemma form – 10.8%; choice of wrong dictionary – 6.4%.

Then Lemnitzer shows which words were looked up most in the German-English and the German-French dictionaries. Apart from common words, such as *book* or *love*, they include items belonging to the sexual or faecal vocabulary.

### **Ling et al. (2001)<sup>218</sup>**

[Bergenholtz & Johnsen (2007: 10)]

In their paper on the use of log files, Bergenholtz & Johnsen mention the study carried out by Ling et al. (2001, 2002):

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<sup>218</sup> Bibliographical data provided by Bergenholtz & Johnsen: Ling, Charles X., Jianfeng Gao, Huajie Zhang, Weinig Qian and Hongjiang Zhang. 2001. Mining Generalized Query Patterns from Web logs. *Proceedings of the 34th Annual Hawaii International Conference on System Sciences (HICSS-34) Volume 5*. Washington, DC: IEEE Computer Society Press 5020. <http://research.microsoft.com/~jfgao/paper/hicss01.pdf> (February 2007).

[...] in their analysis of 4.8 million queries, Ling et al. (2002: 1103) conclude that 52.5% of the queries are carried out using one search word, 32.5% using two search words, 10% using three search words and 5% using four search words or more, which, in our opinion, is of no direct relevance to the lexicographic concept. Moreover, when analysing a much smaller number of queries (271 803), Ling et al. (2001) reach the same conclusion, i.e. that exactly 52% of the queries are carried out using one search word. These analyses show but one fact: that an online dictionary allowing the users to search by means of one search word only does not correspond to the users' habits or needs.

## **Winkler (2001)**

Winkler reports on two studies carried out in 1999 and 2000 on the use of two English MLDs on CD-ROM. On the whole, 100 subjects took part. They "were taking English language classes at English teaching units of various universities in Britain" and "had been classified as intermediate or upper-intermediate by their language tutors" (p. 194).

All of them filled in a questionnaire containing some of the typical items of questionnaires about dictionary use, and in a "short interview after the task they were asked to give feedback on the CD-ROM dictionary they had just worked with" (p. 197).

Twenty-five students participated in the first or "exploratory" study. In the *Oxford Interactive Wordpower Dictionary*, they had to "look up specific words, interpret relevant entries and find specific information under chosen headwords, such as irregular forms, idiomatic phrases, phrasal verbs or collocations" (p. 195).

The second investigation consisted of two parts.

In one of them, 25 "pairs of students worked through three exercises randomly selected from a subset of those in OIWP" (i.e. *Oxford Interactive Wordpower Dictionary*); they "were expected to look up certain words or phrases and records of their activity were kept".<sup>219</sup>

In the other part, 25 students wrote – on screen – a composition on a topic chosen from "a fairly general list of titles" (p. 196). This task, which "focused on searches in the *Oxford Advanced Learner's Dictionary on CD-ROM*", "involved switching between the students' document and the dictionary on CD-ROM and carrying out various searches, in the A-Z list or elsewhere in the dictionary" (*ibid*).

"Both dictionaries on CD-ROM are derived from their paper-based counterpart but include further information, such as pictures and videoclips, a pronunciation and recording facility, vocabulary exercises and games" (p. 195).

The author does not reveal detailed data, but only presents general results or approximate numbers.

Results of the questionnaire and the interviews:

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<sup>219</sup> The author does not make it clear whether the records were kept by the students or by herself. On p. 197 she asserts that she "was present while the tasks were carried out, offering help when this was needed, and noting all the words students looked up"; but how could she observe 25 pairs of students simultaneously? In another study (cf. Winkler 2001a), she makes it explicit that "the notes were taken by the researcher" and that they were written down on "record-sheets of students' look-ups". As to the record sheets in the present study, they "stored information on reasons for students' searches and how successful the look-ups had been, indicating actions following failed searches, details of where students had found information in the respective entries, and any further comments on the look-up processes" (*ibid*). Since students "were also encouraged to think aloud [...] and their utterances were audio-recorded" (*ibid*), several or even many of the data supposedly are based on these TAPs.

- Subjects preferred BDs to MDs; many of them owned only a BD.
- None of them had been taught the use of dictionaries.
- Few of them had used an ED before.
- In the EDs used in the tasks, they appreciated mainly the pronunciation facility, the pictures and the games. Those who wrote the composition considered it easy and advantageous to consult the ED.
- One third of the subjects suggested the inclusion of more information (e.g. grammatical and cultural), more technical vocabulary and a thesaurus.

Results regarding the look-ups during the tasks:

- About 75% of the subjects appreciated the fact that “typing in the first few letters in an Entry box on screen will take him/her to the respective part of the dictionary” (p. 198).
- “The additional Spellchecker facility of OIWPD helped many subjects disentangle the irregularities of English orthography” (*ibid*).
- “Those students who had to deal with phrasal verbs and idioms also appreciated the fact that they were able to go directly to the respective sections in the Contents area after entering the basic form” (p. 199).
- In the writing task, they “tried out the Advanced search facility offered by OALD, using Wildcards, Boolean operators and filters”, but they felt “that the outcome was not always helpful for the context” (*ibid*).
- “The electronic medium seemed to be much more motivating and exciting to learners and thus encouraged them to browse and look up words.” On the other hand, “a fifth of the students seemed to forget information as quickly as they found it since they experienced the same problems on a second search” (*ibid*).

The researcher concludes that a dictionary on CD-ROM “could be a much better reference and language building tool [...] than a book dictionary”, but “a number of design and content features will have to be changed if the aim is to create a tool that would really benefit users” (p. 203).

### **Winkler (2001a)**

In this study, the author investigated “how learners of English as a foreign language learners [*sic*] use an English learner’s dictionary, in book form and on CD-ROM”.

The subjects were 30 “upper-intermediate/advanced students of English” of various nationalities who “were taking English classes at universities or English language schools in Britain”.

First, they were administered a questionnaire as in the study reported by Winkler (2001).

“Before working on the tasks, students were given a dictionary tour, which lasted about twenty to thirty minutes. The tour mainly demonstrated the most important facilities of the dictionary on CD-ROM, but also explicitly compared different presentations of the same entry on paper and on screen.”

“The writing task involved composing a short text on-screen in half an hour”; students had access to OALD5 in book form for the first half of the session and were then allowed to use the CD-ROM.” Winkler proceeded in the following way:

[...] students were encouraged to think aloud and their utterances were recorded. The researcher also noted each time the reason(s) for the look-up, whether or not information had been found and where, how easy/difficult the search had been, what strategies students had applied, and finally students' actions after failed searches. It was assumed that in some cases the researcher would have to ask students to clarify specific aspects of their searches and that it would be necessary to assist students with more complex searches.

In the section on “Findings”, the author curiously first presents a “taxonomy of dictionary skills” and then mentions – without distinguishing between the data obtained in the TAPs and in her own notes – the problems that occurred during the consultations.

Here are some general observations:

With the CD-ROM dictionary, students expected to find more information than in its paper-based counterpart, namely, cultural details, synonyms and technical terms.

It seems that without guidance of some kind, the user will find it difficult to exploit the dictionary and to make sense of the outcome of advanced searches.

As expected, even some of the higher-level students had great difficulties in dealing with abbreviations, codes and symbols. The help that the CD-ROM dictionaries offer in this respect by displaying the full term in a pop-up window when double-clicking on the symbol or abbreviation was appreciated by all participants.

In general, it seems that the advanced search facility of the CD-ROM dictionary offers the user more than the book dictionary but it would have to be modified in order to be really helpful.

### **Chang (2002)**

[Lin & Huang (2008: 91)]

Lin & Huang describe this study as follows:

Chang (2002) had 92 twelfth-graders read a short story under three conditions: reading with L1 marginal glosses, reading with electronic dictionaries and reading with no assistance. After reading, participants were given three vocabulary tests on sixteen target words and one reading comprehension test; two weeks later, participants received the same vocabulary test. The results showed no significant difference in reading comprehension test; however, on incidental vocabulary learning, it was found that marginal glosses had greater effects than electronic dictionaries on immediate test, but the positive effects that marginal glosses generated vanished on the delayed test for retention. The participants reading with L1 marginal glosses could acquire eighteen percent of the target words and retain two percent; those with electronic dictionary could acquire fifteen percent and retain four percent; and, those without any assistance acquire three percent and retain less than one percent (0.6%) of the target words.

### **Ling et al. (2002)<sup>220</sup>**

[Bergenholtz & Johnsen (2007: 10)]

Please see Ling et al. (2001).

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<sup>220</sup> Bibliographical data provided by Bergenholtz & Johnsen: Ling, Charles X., Jianfeng Gao, Huajie Zhang, Weining Qian and Hongjiang Zhang. 2002. Improving Encarta Search Engine Performance by Mining User Logs. *International Journal of Pattern Recognition and Artificial Intelligence* 16(8): 1101-1116.

## Loucky (2002)

Loucky wanted to find out to what extent different types of BEDs improve look-up speed and word retention in comparison to paper BDs.<sup>221</sup>

The subjects were 43 Japanese college freshmen “from several different majors and [English] proficiency levels”. There were 26 Engineering students (13 of intermediate and 13 of pre-advanced level), 8 students “at a Lower Intermediate level at a vocational electronics junior college” and 9 upper intermediate English majors (p. 296).

On p. 295, Loucky mentions three types of BEDs: (a) portable BEDs, (b) “computer translation and dictionary software”, and (c) “OCR-scanning Quickionary Reading Pens” (p. 295). Students were instructed how to use them.

Two different tasks were given to the different subjects: Students from the two Engineering classes had to access and record ten unknown English words as fast as possible, while English and Computer majors were asked to find as many words as they could within ten minutes. In the first case, the time taken, and, in the second case, the number of words found were recorded. Loucky does not state how the recordings were done.

His presentation of results is quite confusing: (a) He distinguishes four types of EDs, whereas previously he has cited only three. Perhaps the “electronic dictionaries” and the “portable phones” mentioned in the results section both belong to the category of “portable BEDs”. (b) When presenting the results concerning the number of words accessed in ten minutes, he distinguishes all four proficiency levels and refers to “many classes”, although only two groups had been asked to find as many words as they could. (c) He asserts that the “number of words accessed and recorded by many classes working for only forty to fifty minutes [...] was quite remarkable” (p. 297), but according to the information provided in the item on procedure, students had had only ten minutes to carry out the task. As a matter of fact, the results shown do seem to refer to “forty to fifty minutes”; but even this is not informative enough, since there is a great difference between forty and fifty minutes. (d) It is not at all clear what the author means in the following clause: “When replicating Laufer and Hadar’s (1997) study, [...].” He does not explain in which way he replicated that study. Perhaps he is only referring to the fact that various types of dictionaries were compared.

Results (p. 296 f.):

- Average access speed when using different types of BEDs (in minutes):
  - Pre-advanced Engineering students: Quickionary Reading Pen – 5.2; Laptop Brother translation software – 5.56; “Electronic dictionaries” (supposedly portable BEDs) – 5.9; portable phones (“using only bilingual dictionary access”) – 5.2 (the true figure is probably 6.2); paper BDs – 7.2.
  - Intermediate Engineering students: Laptop Brother translation software (portable?) – 5.83; BEDs – 6.06; paper BDs – (no time indicated, “came in third”); Quickionaries – 6.78; portable phones – 10.5.
- Average number of words “accessed and recorded by many classes working for only forty to fifty minutes”:
  - Lower intermediate level classes – 61.25; upper intermediate classes – 43.5; “pre-advanced class” – 40 (“50 for those who also used portable phone [BED]”); “intermediate class” – 40 (“50 for those who also used portable phone [BED]”).

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<sup>221</sup> This study is summarized here, in the subchapter on EDs, because one or two of the electronic facilities were (portable) EDs. I will use “ED” or “BED” for all of the facility types.

The last of Loucky's research questions had been "Do [BEDs] help to enhance learners' interest, interaction and motivation levels, and thus help to contribute to higher levels of vocabulary retention?" (p. 294). Curiously, only in the section "Discussion and interpretation" does the author make a few comments on this issue, and asserting that he had administered to two classes "a productive post-test (unannounced) after one week on ten formerly unknown words". Ten Engineering students "got perfect scores" in this retention test, while the English majors "only averaged 40% retention" (p. 300).

### **Selva & Verlinde (2002)**

The aim of this study was to "test the features" of an online ED for learners of French as FL or L2 (*Dictionnaire d'Apprentissage du Français Langue Étrangère ou Seconde – DAFLES*) which had been elaborated by the authors and which was being enlarged and improved. The researchers describe it briefly as follows:

Among the innovations, there are a sense description that varies according to the task being carried out (decoding or encoding), with short definitions for decoding and long ones (full-sentence definitions as in *Collins Cobuild* [...] for encoding, access to a syntactic description of every word sense, the possibility to surf (in nets of parasyonyms) from sense to sense, the visualization of actantial schemes for verbs, and a classification of multi-word items connected to their constituents by simple lexical functions [...]. In the actantial schemes, the syntactic structures of verbs are completed with a list of prototypical words which can occupy the different positions around the verb (the actants), as well as of prototypical circumstancials, and the word that translates the action expressed by the verb (p. 773).<sup>222</sup>

In their study, Selva & Verlinde had at their disposal 67 native speakers of Dutch who apparently were learning French. The authors do not describe the FL proficiency of these subjects, 40 of whom were third-year students of Political and Social Sciences (group A) and 27 of whom were in their fifth year of Applied Economic Sciences (group B).

Before the tasks, the subjects were shown the peculiarities of the DAFLES for ten to fifteen minutes. During the task, all look-ups were registered electronically (in log files).

The students had to carry out four tasks, corresponding to four circumstances of use. The researchers wanted to find out which types of information would be looked for in each of these circumstances. Subjects were asked to: 1) choose in the ED the right sense of a word in context (*viz.*, embedded in a sentence); 2) translate a sentence from Dutch into French; 3) fill in a blank in a French sentence, opting in the ED for one of the synonyms; and 4) show knowledge of actantial schemes.<sup>223</sup>

When the fourth task was carried out by group A, the authors perceived that it was too easy. Therefore, they rendered it more difficult for group B.

For each of the first three tasks, Selva & Verlinde show the percentages of correct responses of the two groups; but, for task 4, only the results of group B. Although in two

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<sup>222</sup> This ED is now integrated in the *Base lexicale du français (Lexical Database for French)*. Cf <http://ilt.kuleuven.be/blf>.

<sup>223</sup> The authors assert that this fourth task involves actantial schemes and that the students had "to complete sentences searching the right word or expression in the tables"; but, as can be seen in the attached task form, this task description is not entirely correct.

items of the whole test there are large differences between the two groups (item 2 of task 1 and 3), the authors do not comment on them.

Since the results regard specific French words, I will not present them in detail, but only quote or mention some of the researchers' observations.

- As to item 4 of the first task, in which the students had to choose the correct sense among nine: “[...] group A did not use many [full-sentence] definitions ([*viz.*], 45, sought by only 17 of the 40 students). Group B, smaller and at a higher level, consulted 94 long definitions – which did not lead to better results. [...] Examples were consulted frequently (140 and 118 times, respectively), which confirms Laufer's (1992) and Harvey & Yuill's (1997) studies, according to which examples are essential for comprehension. At any rate, the learners consider them necessary. The translations were not consulted very much [...]: 45 and 17 times, respectively.” (p. 775)
- About task 1 in general: “[...] those learners who erred did not consult the relevant information, namely the long definition and the example of the correct sense [...]. Also very few – only about ten, and not always successfully – took advantage of the information on syntax [...].” (p. 775 f.)
- Regarding tasks 2 (L1-L2 translation) and 3 (choosing among parasyonyms), the researchers assert that those who erred had consulted neither the long (full-sentence) definitions nor the examples.
- As to task 4, the responses of 69% to 100% of group B students were correct for all four items. However, it must be taken into account that between 42% and 88% of the subjects already knew the respective words.

In the section “Lessons to be learned from the study” (p. 779), Selva & Verlinde state the greatest problem was that the students did not take advantage of all types of available information. For example, “the syntactic information, which appears in three different forms – in the long definition, in the examples and as formal syntactic structures – does not draw their attention”. The authors ask themselves whether the subjects did not imagine that this information exists in the DAFLES or whether it was difficult to understand. Furthermore, they acknowledge that despite the full-sentence definitions – in which an “vocabulary as easy as possible is used” – the comprehension of definitions continues to be problematic.

### **Wingate (2002)**

Computerized dictionaries were used in the investigations carried out by Wingate, but the entries were the same as those of print dictionaries. Please see the summaries of these research reports in 4.1 and 5.1.2.

### **Koyama and Takeuchi (2003)**

[Koyama and Takeuchi (2004a: 1019)]

Koyama and Takeuchi (2004a) provide the following description of this investigation:

Koyama and Takeuchi (2003) is one of the first attempts to clarify some differences in two types of dictionaries by adopting quantitative and qualitative techniques. In the study, they found that some relations existed between the dictionary's interface design and the learners' impression of each dictionary. They also reported that the number of look-ups in using ED was not necessarily proportional to the retention of looked-up words, and claimed that the relatively rudimentary interface design of PD might lead to higher word retention. A subsequent study conducted by

the same authors [...] confirmed this prediction, and revealed that the words looked up in the PD tended to be better retained than those in the ED. They maintained that the difference in word retention between the two types of dictionaries was attributed to PD's longer searching-process, which is inherent to its interface design.

### **Osaki et al. (2003)<sup>224</sup>**

[Kobayashi (2006: 62)]

Kobayashi's summary reads as follows:

Osaki, Ochiai, Iso, and Aizawa (2003) compared the effects of an ED and a PD on accessing appropriate meaning, reading comprehension, and word retention. One hundred sixty-seven Japanese university students were asked to read a text and write down the definitions of the underlined words in one of the three dictionary conditions: the ED, the PD, and the no-dictionary (ND). Next, all students took a comprehension test in the fill-in-the-blank format. The two dictionary groups were also given a vocabulary test that required supplying definitions for 15 target words immediately as well as a week later. Osaki et al. found that the ED scored the best on the definition test, followed by the PD group. The ED groups also outperformed the PD groups on the reading comprehension test, which in turn outperformed the ND group. These results suggest that an ED facilitates choosing the contextual meaning as well as comprehending a text better than a PD, although the PD is still more helpful than no dictionary. There were no significant differences between the ED and PD groups on both the immediate and delayed vocabulary tests, suggesting that dictionary types do not influence word retention.

### **Shizuka (2003)**

[Kobayashi (2006: 60)]

Here is Kobayashi's brief summary<sup>225</sup>:

[Shizuka] (2003) investigated the relative effects of an ED to a PD on empirical and perceived efficiency of meaning and example retrieval. Seventy-seven university students took a speed test that required locating word meanings and examples, using either an ED or a PD. They also completed a survey about their perceptions of the two dictionary types. The results indicated that an ED was more efficient in accessing word meanings, and that the effect was multiplied by the users' familiarity with an ED. However, there were no differences between the two dictionary types in the efficiency of accessing examples. The participants overwhelmingly preferred an ED.

### **Chun (2004)**

The following abstract is to be found at [http://www.dbpia.co.kr/view/ar\\_view.asp?pid=46&isid=24857&arid=536826&topMenu=&topMenu1](http://www.dbpia.co.kr/view/ar_view.asp?pid=46&isid=24857&arid=536826&topMenu=&topMenu1):

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<sup>224</sup> Bibliographical data provided by Kobayashi (2006): Osaki, S., Ochiai, N., Iso, T., & Aizawa, K. (2003). Electronic dictionary vs. printed dictionary: Accessing the appropriate meaning, reading comprehension, and retention. In M. Murata, S. Yamada, & Y. Tono (Eds.), *Dictionaries and language learning: how can dictionaries help human and machine learning* (pp.205-212)?

<sup>225</sup> Kobayashi provided an incorrect name (Shimizu). The title and other bibliographical data indicate that the author is Shizuka.

The study aims to obtain a profile of users in previous instruction learners have received with regard to solving vocabulary gap problems in Korean (L1) and English (L2) writing, to gain knowledge on the type and form of dictionaries, and the dictionary use strategies that are being used in writing Korean (L1) and English (L2) compositions. Data was collected through questionnaires and semi-structured interviews from 54 students in three English composition classes at a university. The analysis of the data revealed that the students have hardly received instruction for solving lexical gap problems and dictionary use in writing of L1 and L2. With regard to the type and form of dictionaries used in writing L1 and L2, the print monolingual dictionary and the Internet (online) bilingual dictionary was most popularly used where Korean-English bilingual dictionary is most frequently utilized in L2 writing. The results imply that easy access of the Internet (online) bilingual dictionaries contributes to its popular use in L2 writing. The dictionary use strategies that students employed to reduce their vocabulary gap knowledge differed significantly between L1 and L2, favoring L2. The results suggest that writing tasks in L2 entail learners to solve lexical gap problems and that there is need to devise classroom tasks for productive use of dictionaries.

### **De Schryver & Joffe (2004)**

The authors claim that, “[a]lthough the proposal to draw upon log files to *improve* dictionaries was already expressed in the mid-1980s [...], very few reports have been published of *real-world dictionaries* making use of this strategy” (p. 187). They themselves intended to investigate the use of such a real-world dictionary; more precisely, “a bilingual dictionary between Sesotho sa Leboa (a Bantu language spoken in South Africa) and English”, which they were compiling. “This dictionary has been made available on the Internet (<http://africanlanguages.com/sdp/>), and with approximately 25 000 items on the Sesotho sa Leboa side and 28 000 in the English search index [...], it is currently the largest freely-available African-language Internet dictionary” (p. 188).

A “well thought out log file has been unobtrusively keeping track of all aspects of the main dictionary log files of the first six months” (p. 189).

#### Results:

- Consultations increased steadily. On average, 16.8 people used the BED 116.6 times per day; in 65% of the cases, they consulted the English part. On weekends, use decreased.
- Thirty of the 100 words looked up most frequently belong to the 100 most frequent words in a corpus of 6.1 million words of Sesotho sa Leboa, and 64 of those looked up most frequently are among the 1,000 most frequent ones in that corpus. In the case of English, 18 of those looked up most frequently belong to the 100 most frequent ones in the British National Corpus, and 62 to the 1,000 most frequent ones. (In their conclusion, the authors assert that “most visitors tend to look up frequent items on the one hand, and sexual/offensive items on the other” (p. 194).
- “Not all lookups were successful [...]. Quite a number of English words [were] searched for in the Sesotho sa Leboa side and vice versa. A surprisingly high percentage of words [were] also consistently misspelled and/or mistyped in both languages” (p. 191).

As an example, De Schryver & Joffe show all look-ups of one of “several dozen regular visitors” (p. 192). In the next to the last section of their paper, they claim that, following the invitation to provide feedback, 52 users sent messages during the first six months, 40% of which were “written in support of the project”; and that several messages contained “general remarks and useful tips” (p. 193).

### **Iso & Osaki (2004)<sup>226</sup>**

[Kobayashi (2006: 63)]

Kobayashi provides the following summary:

Iso and Osaki (2004) partially replicated [Osaki et al.'s (2003)] study. Using the same research design, they compared the effects of an ED and a PD on accessing appropriate meaning, reading comprehension, and word retention. The same 167 students participated in this study. An easier text than the one used in the previous study was chosen. Instead of tests in the open-ended and the fill in the blanks formats, a reading comprehension test and a vocabulary test in the multiple-choice format were used. Iso and Osaki found that there were no differences between the dictionary groups in reading comprehension. Although significant differences were found between the ND group and the two dictionary groups, there were no differences between the PD and ED groups in accessing the appropriate word meaning. There were no significant differences between the PD and ED groups in word retention.

### **Koyama & Takeuchi (2004a)**

In 2007, this paper was available on the internet at [http://www.paccall.org/2004/2004proceedings\\_papers/koyama.pdf](http://www.paccall.org/2004/2004proceedings_papers/koyama.pdf). In 2010 it is difficult to find. Here is the abstract:

The main purpose of this research is to explore the differences in learners' look-up behavior between handheld-electronic dictionaries (hereafter ED) and printed dictionaries (hereafter PD). We focused, particularly, on the relation between learners' look-up frequency and degree of reading comprehension of the text. A total of 72 undergraduate students participated in the experiment, and were divided into two groups (ED and PD Groups) with approximately the same proficiency. Each group was assigned two tasks; to read the texts by using the designated dictionary (ED or PD) and to answer quizzes related to the texts they had read. The number of looked-up words, the time they needed for the tasks, and the quiz scores in each group were statistically examined. The results showed the ED group looked up more words to comprehend the texts than the PD group did in a shorter period of time. However no significant difference was found in the quiz scores. These findings indicate that increased look-up frequency induced by ED does not necessarily guarantee better reading comprehension of learners' [...].

### **Sánchez Ramos (2004)**

The summary of the study reported by the author (in which EDs were used) is to be found in chapter 7, because her investigation dealt with the teaching of dictionary use.

### **Bergenholtz & Johnsen (2005)**

In their paper on the usefulness of log files, the authors analyse the log files of the *Danish Internet Dictionary*, “a Danish monolingual dictionary with 108,000 dictionary entries and a total of 126,000 different ‘records’, i.e. the dictionary contains 18,000 subentries for polysemy” (p. 121 f.). After mentioning three “internet dictionaries that carry

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<sup>226</sup> Bibliographical data according to Kobayashi (2006): Iso, T., & Osaki, S. (2004). Denshi jisho to insatsu jisho ni miru eibun dokkai, goi kensaku, hoji no sai. Paper presented at a conference, Tokyo, Japan.

statistics of the search frequency” (p. 122 f.), they reveal some “statistics made by the Danish telecommunication company, TDC” (p. 123) on the use of the Danish online reference work.

General results:

- Numbers of daily “single” searches<sup>227</sup>: in 2003 – 1,631; in 2004 – 2,520; on the first four days of the week – between 4,000 and 4,500; on Fridays – about 3,500; during holidays and on weekends – between 1,000 and 1,500.
- Numbers of entries (or “records”) found or not found in a total of 1,016,960 searches on 456 “logging days”: found – 818,613 times (80.5%); not found (i.e. the word sought does not exist in the dictionary as a lemma, e.g. the passive form, the imperative form, words spelled incorrectly or missing lemmas) – 198,347 (19.5%).
- Search possibilities used: “the word is” – 84.19%; “the lemma begins with” – 7.65%; “the lemma contains” – 6.48%; “the lemma ends with” – 1.68%.

After providing these figures, the authors show which types of words caused difficulties, which types were looked up most and which ones were not searched for.

### **Frankenberg-Garcia (2005)**

EDs were only one of various types of reference sources used in this study. Therefore, this piece of research is described in chapter 3.

### **Johnsen (2005)<sup>228</sup>**

[Bergenholtz & Johnsen (2007: 5 f.)]

Bergenholtz & Johnsen provide mainly the following information:

In Johnsen (2005), a survey of five Internet dictionaries representing different languages is carried out with the aim of establishing two facts: (1) the extent to which Internet dictionaries are used and whether the use of Internet dictionaries is increasing, and (2) whether the log files of these dictionaries show similarities in terms of user behaviour. The dictionaries in question are the [...] *Danish Internet Dictionary*, *Eurodicautom* (a polylingual database compiled by translators in the European Union), *Wortschatz Deutsch* (a German and German–English dictionary), *Cambridge Dictionaries Online* (various monolingual English dictionaries) and *Bokmålsordboka* (a monolingual Norwegian dictionary).

The bare figures show that all five dictionaries are widely used with an average of 6 000– 6 500 daily searches in the *Danish Internet Dictionary*, 162 074 in *Eurodicautom*, 329 657 in *Wortschatz Deutsch*, 205 480 in *Cambridge Dictionaries Online* and 7 932 in *Bokmålsordboka*. The survey also reveals that the number of queries have increased over time, particularly in the first years of a given dictionary's life. In order to evaluate the user behaviour, the top 20 queries

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<sup>227</sup> The authors define “single search” as “every new article searched for, either by looking for a new lemma or by linking from one article to another” (p. 125).

<sup>228</sup> Bibliographical data provided by Bergenholtz & Johnsen: Johnsen, Mia Steen. 2005. Logfiler som leksikografisk analyseinstrument og hjælpeværktøj. [https://merkur2.asb.dk/F/C5NCNGIFXTRQS6JNBMTJJ8\\_X22\\_522SV62KHICN6YVYJQQXBEGM-00166?func=service&doc\\_library=HBA01&doc\\_number=000139835&line\\_number=0001&service\\_type=MEDIA](https://merkur2.asb.dk/F/C5NCNGIFXTRQS6JNBMTJJ8_X22_522SV62KHICN6YVYJQQXBEGM-00166?func=service&doc_library=HBA01&doc_number=000139835&line_number=0001&service_type=MEDIA).

of the dictionaries as established by the log files were compared (with the exception of *Eurodicautom* as no data were available).

### Kobayashi (2005)

This is a first report of the study described in more detail by Kobayashi (2006). Since this paper is available on the internet, I only quote the abstract:

This article reports on a study that investigated the use of pocket electronic dictionaries (EDs) compared with printed dictionaries (PDs) by Japanese learners of English, and the impact of EDs on their use of lexical processing strategies (LPSs) (e.g., consulting, inferring, and ignoring). Data were obtained from 279 university students through a questionnaire. The results show that EDs already played an important part in their learning of English. The majority of students owned an ED, and those who own an ED appeared to depend heavily on it. EDs had a rather positive impact on student LPS use. EDs increased the frequency of dictionary consultation of students, especially of those of low vocabulary proficiency. Furthermore, EDs did not have a negative influence on the student LPS use. Successful students frequently used a variety of LPSs, regardless of whether they were using an ED, or a PD.

### Kozlova (2005)

This is a doctoral thesis written in Spanish and defended in Barcelona. Here are some sentences from the English abstract available at <http://www.tesisenxarxa.net/TDX-1128106-112356/>:

The object of the present study is instrumental competence, understood as a sum of theoretical knowledge and practical command of external reference sources. [...]

[...] we define the instrumental competence and create a model of lexical retrieval from reference sources based on three axes: the task function, the access key function and the search criteria function.

The practical part of this thesis aims at validating the mentioned model of reference. Our corpus is composed by Messenger chat conversations our subjects had in groups while engaged in the task of correcting mistakes. The texts to be corrected were composed by students as summaries and formed part of their semester project. The teacher had previously marked the mistakes, leaving it to the students to follow with the problem solving process. The subjects could look for answers in their memory as well as in the resources, electronic dictionaries in our case. The resulting chat conversations were analyzed and action sequences were established, which allowed us to verify several hypotheses. We've discovered that a deeper cognitive implication was not directly related to better results, while a deeper search in resources was. Moreover, we identified some of the causes of look-up success and failure.

Unfortunately, in her thesis Kozlova does not state clearly the number of participants. She informs the reader that each group was composed of three or four students. There must have been more than 25, since she asserts in chapter 5 that 25 questionnaires about the task were returned, but not all subjects did so.

There are no clear data on dictionary use either. However, on pages 54-55 of chapter 5, she claims that:

The external aids [i.e. mainly electronic dictionaries] were a clearly positive factor in the acceptable solution of problems. One group of subjects managed to increase the number of their

acceptable solutions from 5 to 9 thanks to the use of external aids, while the average of acceptable results of other groups, who did not resort to external aids, was only 5 out of 10.

### **De Schryver et al. (2006)**

In 2004, De Schryver & Joffe described an online BED (the languages being the South African Sesotho sa Leboa and English) and reported on its use (please see the summary above). De Schryver, et al. (2006) quote some critical remarks made by Bergenholz & Johnson (2005: 122) on that study, e.g.:

It would be most interesting to know which types of words are not looked up [...]. The very limited number of lookups indicates that no more than 40-50% of the dictionary is actually being used. [...] are there some lemmas that will never be looked up? If future dictionary makers knew the answers to those questions, they would not have to waste time describing words of no interest to the users.

Apart from describing a new project (a Swahili-English internet BED), De Schryver et al. try to refute Bergenholz & Johnson's criticism, on the one hand explaining characteristics of Swahili and on the other hand showing how many times the ten most frequent Swahili words (according to a 15-million-word corpus) were looked up. They also show how many times the most frequent English words (according to the 100-million-word British National Corpus) were looked up in the dictionary's English index. They found that "there is indeed some minor correlation between corpus ranks and actual dictionary lookup ranks for the first few thousand words (up to 3000 for Swahili, and up to around 5000 for English), but beyond that point there simply is no correlation whatsoever" (p. 78), and they conclude "that it is simply impossible to know in advance which words users will want to look up in a large dictionary" (p. 79).

### **Kobayashi (2006)**

This PhD thesis is available on the internet, which is why I only quote the abstract:

As L2 learners increasingly depend on electronic reference materials, it has become crucial to investigate how such materials are used and what impact they have on L2 learning. Pocket electronic dictionaries (EDs) have particularly become popular among Asian learners of English in the past decade. This study compared the use of EDs with PDs among Japanese university students. It also examined the relationships between students' ED use and their use of lexical processing strategies (LPS; consult, infer, or ignore), their vocabulary learning, and their reading.

In order to construct a complete picture, this study investigated these issues both quantitatively and qualitatively, through multiple investigative techniques. This study consisted of two phases. In Phase 1, quantitative data were collected from 279 students, using a written questionnaire on LPS use, the Vocabulary Levels Test assessing vocabulary size, and the Reading Comprehension section of the TOEFL assessing reading proficiency. In Phase 2, both qualitative and quantitative data were collected from the 22 students selected from those who participated in Phase 1, through a follow-up interview about the questionnaire, retrospective think-aloud protocols elicited during a reading session, and two types of vocabulary tests administered a week after the reading session to assess word retention.

The findings showed that EDs have become popular tools for Japanese learners of English; the majority of students (72% of 279 students) owned an ED, and those who owned it tended to use it exclusively, although they also owned a PD. The results indicated the complex nature of the effects of EDs. EDs appear to increase the frequency of dictionary consultation by students, particularly by low-proficiency students. In this sense, the effects of EDs on L2 use may be positive. Also, EDs may positively influence long-term L2 learning because frequent dictionary consultation is likely to cumulate in greater vocabulary learning in the long run. However, EDs may not benefit all students equally. The increase in the frequency of dictionary consultation may be accompanied by varying degrees of decrease in the frequency of inferring. Therefore, frequent dictionary consultation may result in less interaction with the textual context, particularly for some students who are not proficient enough in English or skilled enough in LPS use to take advantage of EDs. For these students, EDs may not necessarily positively influence reading comprehension or word retention. Among the pedagogical implications of these findings is the need for training in the use of EDs in order to help students make the best use of EDs.

### **Komuro et al. (2006)<sup>229</sup>**

[Dziemianko (2010: 259)]

According to Dziemianko, this study “judges the usability of OALDCE7 on paper and in electronic form and leads to the conclusion that explicit instruction in using the electronic version is necessary”; and “it is believed that looking up more words might be conducive to (incidental) vocabulary acquisition”.

### **Laufer & Levitzky-Aviad (2006)**

The authors wanted to investigate the effectiveness of two versions (one paper, the other electronic) of a new type of BD. Please see the summary of the study in 4.3.1.

### **Bergenholtz & Johnsen (2007)**

In Bergenholtz & Johnsen (2005), the authors had already dealt with the use of log files. Now they state that log files “are used ever more widely in the field of lexicography” (p. 5) and they propose “the development of lexicographically relevant log files for the use in log file analyses in order to give a true picture of how and why different dictionaries are employed for different purposes” (p. 1). They claim that “log files are a useful supplement to corpus-based lemma selection as they may be used to reveal lemma lacunae, frequent misspellings, frequent searches for MWUs [multi-word units], etc.” (p. 4).

After discussing several types of user surveys (p. 7 ff.), they argue that ‘If log files really are to reflect how and for which purpose dictionaries are used, a function-oriented set of search and link options is required’ (p. 11), and make suggestions for the collection of log file data (p. 12 f.). In section 6 they present some date, based on function-oriented log

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<sup>229</sup> Dziemianko provides the following bibliographical data: Komuro, Y., Shitara-Matsuo, Y., Ishii, Y., Uchida, S., Kawamura, A. and Kanazashi, T. 2006. An Analysis of the Oxford Advanced Learner’s Dictionary of Current English, Seventh Edition, with Special Reference to the CD-ROM. *Lexicon* 36: 55–146.

files, concerning the searches in two Danish online dictionaries (*Danish Music Dictionary* and *Danish Phraseological Dictionary*).

Some results:

- Purposes of searches in the *Danish Music Dictionary*: to understand a text – 53.89%; to obtain further information – 46.11%.
- Purposes of searches in the *Danish Phraseological Dictionary*: to understand a text – 58.01%; to write a text – 26.43%; to obtain further information – 15.56%.

### **Duran (2007)**

The author individually observed 5 Brazilian undergraduate students of translation “during an authentic French-Portuguese translation exercise”, in which they were free to use any type of reference tool. The aim was to verify their search strategies and to discover which types of dictionaries and online reference tools they use. Duran herself took notes on their look-ups. According to her (and this is the opinion of several other authors as well), a lexical problem provokes a *search*, which may consist of one or more *look-ups*. In her analysis of the data, she comments on the search strategies employed, stating, for example, to what end different kinds of reference sources were used.

Her study is mentioned in this chapter because 96% of all look-ups were done in the electronic medium, mostly in EDs.

Main results:

- A total of 91 searches led to 184 look-ups (which means 2.03 look-ups per search).
- Number of look-ups in different types of (mostly electronic) reference tools: BDs – 56; MLDs – 35; L1Ds – 30; other tools – 63. Thus, 66% of look-ups were done in (mostly electronic) dictionaries, and 34% in other sources such as search machines (*Google* - 17%), term banks, and glossaries.

### **Müller-Spitzer (2008)**

One part of the abstract reads as follows:

This paper will firstly provide an overview of the present state of research on dictionary use with respect to electronic lexicography. Subsequently, explanations of further prerequisites for a possible user-adapted access to data are followed, as exemplified by OWID, the Online Vocabulary Information System of the Institut für Deutsche Sprache [i.e. the Institute for the German Language]. Finally, the results on this subject to date will be outlined.

The analysis of log files resulted in statements such as these, regarding look-ups in OWID (p. 232):

- Most users “search for single words or parts of larger expressions”.
- In many (but not most) searches, Boolean operators are used.
- There are hardly any searches for encyclopaedic information (e.g. names of towns or people) or for “so-called sexual or faecal vocabulary”.

### Lew & Doroszewska (2009)

The report is available at [http://www.staff.amu.edu.pl/~rlew/pub/Lew\\_publ.htm](http://www.staff.amu.edu.pl/~rlew/pub/Lew_publ.htm).  
I only quote the abstract:

In a well-known study, Laufer and Hill (2000) used an experimental electronic dictionary to investigate the lookup patterns and preferences of Israeli and Chinese learners of English and their effect on word retention. The present study attempts to replicate and extend Laufer and Hill's experiment with Polish learners of English. Animated images are introduced in an experimental online dictionary, and are tested on lexical items denoting facial expressions and body reflexes. Lookup patterns and lookup strategies are examined with regard to their impact on vocabulary retention. A strong negative effect of viewing animated images on vocabulary retention is found.

### Chon (2009)

The author claims that

within the context of L2 writing with access to electronic dictionaries, the present study aims to answer the following research questions:

- i. What are the types of lexical dictionary-based problems that are identified by the writers when information is sought via L1→L2/L2→L1 dictionaries or L2→L2 thesaurus paths?
- ii. What are the frequencies of the problems and what are their sources?
- iii. What lexical strategies within the framework of [communication strategies] are used to solve the dictionary-based problems? What are the frequencies of these strategies?
- iii. How do the frequencies of strategies differ related to task (writing topic difference) and L2 vocabulary proficiency? (p. 29).

The subjects were 10 South Korean university students who were participating in a course called *English through the Internet*. A vocabulary test indicated that they could be “regarded as high-intermediate learners of English” (p. 30).

“Each subject was asked to write on two writing topics with an interval of a week. To eliminate any order effect, in the first week, half of the subjects wrote on the first writing topic whereas the other half wrote on the second writing topic, and vice versa in the second week” (*ibid*).

Chon made use of the TAP method, which was trained before the execution of the task.

In the results section, in which he tries to answer the research questions, Chon shows excerpts from some TAPs, divides “dictionary-based problems” (DBPs) into 1-word DBPs and 2-word DBPs, and discusses “dictionary-based communication strategies with regard to DBPs” and “frequency of dictionary-based communication strategies with regard to writing topic and vocabulary proficiency”. The findings are very interesting, but are too detailed to be presented here.

### **Tan (2009)**

An abstract of this paper is available at the site of the South-African journal *Lexikos* (<http://www.wat.co.za/lexikos/lex19Abstracts.pdf>):

This article compares the efficacy of the electronic dictionary with that of the print dictionary in helping learners differentiate senses of polysemous words in dictionaries. [...] the research design in this article encompasses a qualitative phase and a quantitative phase in the overall research study along the dimensions of time order and paradigm emphasis. The element of 'comparison' is included resulting in a design of four paired comparison groups: (1) Group<sup>e-pre</sup> and Group<sup>p-pre</sup>, (2) Group<sup>e</sup> and Group<sup>p</sup>, (3) Group<sup>e-without</sup> and Group<sup>e-with</sup>, and (4) Group<sup>e-withoutLowMed</sup> and Group<sup>e-withLowMed</sup>. Findings show that the electronic dictionary is effective in helping Low to Medium Proficient students (Group<sup>e-LowMed</sup>) in the electronic group after deliberate dictionary training in navigation and windows switching. This is indicated by improved scores regarding time taken (efficacy rate) and a significant correlation between actual efficacy and self-perceived efficacy. The results imply that dictionary users need to be given dictionary training based on specific problems they face. As a whole, how-ever, the print dictionary group has higher efficacy than the electronic group but there was no discernible trend in the relationship between its actual efficacy and the self-perceived efficacy for both groups. This suggests that subjects' perceived efficacy beliefs are not good predictors of their performances.

### **Tseng (2009)**

The following abstract is to be found at [http://hypermedia.ids-mannheim.de/pls/lexpublic/bib\\_en.eintrag?v\\_id=812&v\\_bereich=OBELEX](http://hypermedia.ids-mannheim.de/pls/lexpublic/bib_en.eintrag?v_id=812&v_bereich=OBELEX):

This study examined 38 EFL senior high school students' Yahoo! online dictionary look-up behavior. In a language laboratory, the participants read an article on a reading sheet, underlined any words they did not know, looked up their unknown words in Yahoo! online bilingual dictionary, and wrote down the definitions of their looked-up words. The participants' dictionary look-up records were collected, their look-up errors were categorized into four types, and their look-up behavior was interpreted through seven patterns. The results showed that some participants looked up a word in the dictionary without removing the inflection of it, looked up individual words instead of a fixed expression, did not make good use of the example sentences or phrases provided by the dictionary, or did not take the context into consideration when selecting an appropriate meaning for a word. Based on the students' dictionary look-up errors and behavior patterns, pedagogical implications concerning dictionary look-up instruction are discussed.

### **Chen (2010)**

The main part of the abstract reads as follows:

This study compares patterns of use and perceptions of PEDs and paper dictionaries (PDs). It also examines the effects of dictionary use on vocabulary acquisition under PED and PD conditions. Some different patterns of use between PEDs and PDs are identified, which seem to result from design features of different types of dictionaries. PEDs and PDs are perceived as with different advantages and disadvantages. It is also found that there are no significant differences

between PED and PD in comprehension, production and retention of vocabulary although the speed of the former is significantly faster than the latter.

The subjects were 85 juniors, English majors at Putiam University, Fujian (China).

### **Dziemianko (2010)**

The abstract is quite informative:

The aim of the paper is twofold. First, it aspires to compare the usefulness of a monolingual English learners' dictionary in electronic and paper form in receptive and productive tasks. Second, it sets out to assess the role of dictionary form in the retention of meaning and collocations. The investigation concerns the paper and electronic versions of a recent monolingual English learners' dictionary, COBUILD6 (2008). The study reports on an experiment, in which 64 upper-intermediate and advanced students took part. The test consisted of two tasks: receptive and productive. To complete them, each subject was assigned to work with one version of the dictionary. It turns out that COBUILD online was more useful in both tasks. The results of an unexpected retention test prove it to be a better learning tool as well, since it significantly enhanced the retention of both meaning and collocations.

### **Lew & Tokarek (2010)**

The text of this paper is available on Lew's homepage ([http://www.staff.amu.edu.pl/~rlew/pub/Lew\\_publ.htm](http://www.staff.amu.edu.pl/~rlew/pub/Lew_publ.htm)). Here is the abstract:

The study undertakes to assess the efficiency of entry menus in bilingual dictionaries in the electronic format. An experimental dictionary interface is tested for performance in terms of access speed and task success. The task underlying dictionary use is guided Polish-to-English translation, performed under three conditions by 90 Polish learners of English. The first version of the dictionary displays a complete polysemous entry immediately after an entry is selected. In the second version the user is presented with a menu of senses; once the user clicks on the sense of choice, the full entry is shown, scrolled to the selected sense. The third version is identical to the second, but, in addition, the target sense is highlighted. Our results indicate that a combination of menu-guided sense access and target sense highlighting is effective in terms of both speed and task success, at both user levels investigated. In contrast, the menu alone is not significantly more effective than presenting the full entry at once.

### **Verlinde & Binon (2010)**

The abstract provides the following information:

The way in which a user consults a dictionary, navigates through a dictionary article and finds an answer to specific questions is a popular area of research in metalexicography. The successful development of online dictionaries opens new prospects in this area of research. Log files of online dictionaries may provide interesting 'free implicit feedback' (de Schryver and Joffe 2004: 187). Thanks to its task- and problem-oriented interface, the Base lexicale du français (BLF) allows us to track all dictionary users' actions in a natural setting, outside any controlled research environment. Using these data, it should be possible to make well justified decisions on dictionary design.

After describing the BLF and telling which information its log files contain, the authors reveal some data about how this lexical data base is used. More statistics are available at <http://ilt.kuleuven.be/blf/stats>.

### **Zucchi (2010)**

The main part of this doctoral thesis on the role of dictionaries in FL learning is a report on an investigation into the effects of dictionary use on the comprehension of Italian lexical items.<sup>230</sup>

The subjects were 24 Brazilian university students majoring in Italian. Half of them were in their first semester and the other half in their fifth. They were randomly assigned to three groups: the first was allowed to use a monolingual dictionary and the second a bilingual dictionary; the third group had to do without the aid of any dictionary.

Before the comprehension task they filled in a short questionnaire. They were then asked to read four authentic Italian texts, in which a total of 40 lexical units were highlighted.

In order to avoid the problems related to normal multiple-choice tests and to translation, the author worked out a multiple-choice test in which the subjects had to choose among images. For each target word or expression there were four images depicting things or actions which had something in common, e.g. four types of recipients. Subjects had to choose the image that represented one of the target items (in the sense it had in the text). As Zucchi points out, it was quite laborious to find four images for each of the 40 target items. Of course, such a test is possible only with words and expressions the meaning of which can be represented by images.

The students were requested to make written structured protocols of their efforts to choose the right image. Those who had no dictionary available were to jot down to what extent the context helped them to find the correct response, while the two dictionary groups were asked to indicate how they proceeded in their consultations and which parts of the definitions in the MD or of the entry in the BD were helpful, and which hindered comprehension.

The dictionaries used were EDs that had been chosen by the author because they were available for free on the internet. One was a comprehensive Italian MD, the other a rather simple Italian-Portuguese BD.

The data were analyzed statistically by the university's Centre for Applied Statistics (which claimed that the number of students at the two proficiency levels in each of the three groups was too small to permit statistically sound results regarding the differences between these two levels).

Results concerning the effect of dictionary use:

- The scores of the two dictionary groups were significantly higher than those of the no-dictionary group.
- There was no significant difference between the MD group and the BD group. On two texts, one fared better, and on the other two texts, the other group.

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<sup>230</sup> A report in Portuguese is presented by Zucchi (2010a).

Based on the protocols, Zucchi also reveals which parts (or semes) of the definitions in the MD and which equivalents had helped or hindered comprehension. She also discusses some advantages and disadvantages of the EDs that were used. Analyzing the respective entries, she shows, on the one hand, the deficiencies of the two reference works and, on the other, the subjects' look-up strategies and difficulties. For example, she asserts that students did not choose the right image (i.e. did not understand the target word) for one or more of the following reasons: not reading the whole entry; not searching the lemma form of an inflected verb, but rather stopping at an entry word that had the same form as the inflected verb; not understanding important words in the dictionary definition; not knowing the infinitive form of a verb; not perceiving or not making use of information on usage or grammar; imagining when they did not understand the whole definition, that one word in it (which they already knew) was the same as the target word.

## 7. On the teaching of dictionary use

In this chapter I wanted to present summaries of reports on empirical research on the effects of the teaching of dictionary use. But since there are very few of such investigations, so that the chapter would be extremely short, I decided to include – exceptionally – articles and books which deal with the teaching of dictionary use, but do not report on research into its effect.

### 7.1 List of articles and books on the teaching of dictionary use

A brief overview on the issue mentioned in the title is provided by Béjoint (1989). Apart from discussing it (e.g. enumerating the “skills of the ideal dictionary user”; cf. 1.4.2), he presents a list of works in which the “need for a specific pedagogy of dictionary use has been stressed” (p. 208). The first of the authors mentioned is Flaherty (1923).<sup>231</sup> Then his list goes on like this:

Mathews (1964), Beattie (1973), Marckwardt (1973), Barone (1979), Ard (1982), Scholfield (1982), Descamps & Vaunaize (1983), Mitchell (1983), Tono (1984), Griffin (1985), Herbst (1985), Kipfer (1985), Rossner (1985), Underhill (1985), Crystal (1986), Heath & Herbst (1985), Hartmann (1987[a]), Kühn (1987), etc.

On another page, Béjoint also cites Whitcut (1986).

Some of these authors not only supported the teaching of dictionary use but also reported on an empirical study (cited in previous chapters of the present book). Of course, there are other such reports in which the authors defend the teaching of dictionary use. Wingate (2004) even entitled her report on an empirical investigation “Dictionary use – the need to teach strategies”. But in the following list, I cite papers in which no empirical study is described: the authors only expressed their opinion that dictionary use should be taught. Those articles or books in which more or less numerous exercises were suggested are marked with an asterisk:<sup>232</sup>

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<sup>231</sup> Béjoint provides the following bibliographical data: M. C. Flaherty: How to Use the Dictionary. New York 1923.

<sup>232</sup> It should be remembered that in some of the questionnaire studies summarized in chapter 2, teachers (or students) defend instruction in dictionary use, too. Also, some authors mention universities or schools in which such instruction is provided. For example, Poulet (1999), cited in the following list, asserts: “An empirical survey among some of my colleagues around the country indicates that dictionary-using skills and how to teach and develop them among learners is now included in the ‘methodological’ course, for at least one session, sometimes two.”

Arnold (1979)\*, Herbst & Stein (1987), Walz (1990), Herbst (1992), Roberts (1992), Whitfield (1993), Carstens (1995), Kussmaul [i.e. Kußmaul] (1995), Berwick & Horsfall (1996), Eggert (1996)\*, Horsfall (1997), López Barrios (1997)\*, Chi (1998), Doppagne (1998)\*, Kernermaier (1998), Maldonado (1998)\*, Sandfuchs (1998), Barnes, Hunt & Powell (1999), Martín García (1999)\*, Nesi (1999), Poulet (1999), Wingate (1999), Bishop (2000), Bishop (2000a), Schaeder (2000)\*, Fernández de la Torre Madueño (2001), Prado Aragonés (2001)\*, Müller (2002), Alvar Ezquerra (2003)\*, Hadebe (2004), Höfling, Silva & Tosqui (2004), Pérez Basanta & Sánchez Ramos (2004), Werner (2005)\*.

Apart from such articles, in which the authors express their opinion, it should be mentioned that there are so-called workbooks which teach dictionary use. Please see Stark's (1990) study in 7.2.

## 7.2 Some studies on the teaching of dictionary use

In this subchapter I summarize some reports on studies related to the teaching of dictionary use, but not to the effects of teaching.

### **Griffin (1985)**

[Diab 1990: 46)]

Based on the results of a questionnaire (cf. 2.2), the author designed “a set of materials on dictionary instruction” (Diab).

A group of 55 students of 9 different language backgrounds and of 4 proficiency levels was involved. [...] The exercises for each level were graded in terms of difficulty and transparencies were used to show dictionary conventions. The results of the experiment showed that the subjects expressed interest and a positive attitude to the project. (Diab)

### **Stark (1990)**

This book deals with dictionary workbooks, i.e. smaller or larger books that teach how to use dictionaries. Stark analyses and compares such manuals.

In the first chapter, he explains what and how they are, to whom they are directed and what are their main objectives. The second chapter is devoted to “language needs”, “reference needs” and “reference skills”. In the third and longest chapter, the author enumerates more than thirty criteria of analysis and shows to what extent 40 different workbooks satisfy them.<sup>233</sup> His analyses and comparisons result in an impressive amount of

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<sup>233</sup> The first one dates back to 1935, and the second one to 1963; both are for users of American L1Ds.

data. In the fourth and last chapter, Stark presents a summary, asserting, for example, that 60% of the workbooks provide explanations on parts of speech and synonyms and 48.4% on idioms, while only 22.9% deal with collocations.

The great majority of the workbooks analysed belong to, or teach the use of, specific dictionaries; only four or five are intended to help with the use of certain dictionary types (e.g. MDs of a specific language). On the whole, the 40 workbooks provide instructions on the following types of dictionaries: 14 – MLDs, 13 – L1Ds, 12 – BDs, 1 – MLDs and BDs.

In his short review, Béjoint (1991) complains that Stark concentrated on English language workbooks and states that such manuals exist in France, Israel and India as well. I may add that they exist in even more countries. For example, for Italian learners there is Marello (1993).

### **Doppagne (1998)**

The author wanted to teach her Belgian students how to use English MLDs. First she thought to show them how many mistakes in a composition could have been avoided if such dictionaries had been consulted, but then she decided to try to persuade them that MLDs are useful not only as “anti-error” tools, but also as instruments for improving language knowledge. In her lessons, she used COBUILD2’s workbook. At the end of her article, Doppagne announces that she will administer a test to verify whether the teaching improved the use of MLDs. Apparently, no report of such a test has been published.

### **Müller (2000)**

In this master's dissertation, the author examines to what extent three series of English textbooks used in Brazil explicitly encourage dictionary use, and which learner activities suggested in these books might provide opportunities for consultations. After analyzing and classifying such activities and enumerating the types of look-ups they might provoke, she compares five BDs in order to find out whether they provide the information that would be necessary to solve the problems posed in the activities. She states that “none of them would be sufficient” and concludes that “the teacher can help his or her students, choosing activities like those presented in chapter four to carry out types of searches like those seen in chapter five, and [...] make them aware of the dictionaries’ potentialities and limitations”.

In subchapter 4.1 of her dissertation, Müller shows that in the different levels of one of the series of textbooks analyzed there are a total of twenty activities which “serve as a guide to dictionary use”; they “are always illustrated with reproductions of dictionary entries and followed by exercises in which the students have to consult these entries or their own dictionaries”. The second series of textbooks contains only one such activity, and the third one none.

### **Campoy Cubillo (2002)**

Similar to Whitfield (1993), the author asked her students to work out their own “dictionaries”. Her abstract reads as follows:

As an alternative to the use of dictionary workbooks a group of 85 [Spanish] chemistry students were asked to produce their own dictionaries. Students were told to use the texts they had been referring to during the course and to design a dictionary according to their own needs. The aims of this project were (1) for the students: (a) to revise vocabulary for their final examination and (b) to familiarise themselves with dictionaries and their macro- and microstructures; (2) for the teacher/researcher: (a) to understand the way in which this particular group of students [...] viewed the structure and content of a dictionary, (b) to analyse students’ needs regarding dictionary reference skills, (c) to check the results so as to improve future explanations of dictionary content and dictionary use and (d) to increase awareness of the scope of an ideal dictionary for these chemistry students – and its limitations.

As occurs in some other articles, the author takes it for granted that the texts were in English, so that the students’ dictionaries – limited to about 100 “of the most important or useful words appearing in the texts” – would seem to explain English words.

For the compilation, the students consulted mainly BDs; and their own ones understandably turned out to be BDs, too, since in practically all entries the L1 equivalent was included. Other types of information frequently provided were: pronunciation (in 84.7% of all entries), examples (81.17%), word class (72.94%), and L2 definition (36.47%).

Campoy Cubillo shows details of the different information types included and comments on the students’ main difficulties.

They had been asked to write a short composition “explaining what they had learnt while making the dictionary, and which difficulties they had come across”. The author asserts that many of them complained about not having a good dictionary or not finding technical words in a general dictionary.

### **Amorim (2003)**

In this master’s dissertation, the author verified what information is provided about dictionaries in 34 Brazilian L1 schoolbooks for elementary school children (aged six to ten), which types of consultation exercises are included, what 23 teachers think about dictionaries and which exercises are really done by the students.

Some results:

- The 34 elementary schoolbooks contained a total of 244 exercises on dictionary use.
- Having established the ten most frequent types of exercises, Amorim noted that six of them never were done in half of the classes. Only the following two were done several times in more than half of the classes: 1) reading of a text and search for the meaning of unknown words; 2) reading of a text and search for the sense of specific words in context.
- Dictionary use was initiated in one of three ways: a) the teacher provided an explanation of the dictionary; b) the explanation given in the schoolbook was read; c) a look-up exercise was done, as suggested in the school book.

### **Carduner (2003)**

In “three separate semesters of a third-year, college level Spanish grammar and composition course” at an American university, “lessons on using a dictionary were taught within the context of the course goals” (p. 71). The author does not reveal how many students participated. “In order to assess the overall usefulness and effectiveness of dictionary-skills training, the instructor asked students to rate their overall skill in using bilingual dictionaries at the beginning and end of the semester” (*ibid*).

In his conclusion, Carduner claims that the “favourable findings in the data suggest that foreign language students benefit from dictionary skills training” (p. 73).

Specific skills and strategies examined in this article include raising students’ awareness of polysemy, familiarising students with common abbreviations, encouraging students to consult multiple sources and encouraging them to consult their dictionary or grammar book to reduce errors and verb conjugation misspellings (*ibid*).

## **7.3 Empirical studies of the effects of the teaching of dictionary use**

In this subchapter, I summarize those studies in which the effects of the teaching of reference skills were verified by means of tests.

### **Jacobs (1989)**

The following abstract is provided by ERIC (Educational Resources Information Center):

A study investigated whether instruction in how to use a dictionary led to improved second language performance and greater dictionary use among English majors (N=54) in a reading and writing course at a Thai university. One of three participating classes was instructed in the use of a monolingual learner’s dictionary. A passage correction test administered before and after the instruction was used to assess instructional effectiveness. The amount and type of dictionary use on the course’s final exam measured whether the instruction led to greater use of monolingual dictionaries. Results showed significant improvement on the passage correction test for the class receiving instruction in dictionary use, but none for the other classes. Also, the same class used monolingual dictionaries much more on the final exam. (Retrieved from [http://www.eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?\\_nfpb=true&\\_&ERICExtSearch\\_SearchValue\\_0=ED316025&ERICExtSearch\\_SearchType\\_0=no&accno=ED316025](http://www.eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED316025&ERICExtSearch_SearchType_0=no&accno=ED316025))

### Bishop (2001)

The aim of this study was to find out to what extent a dictionary skills training course improves performance in the writing of a composition.

The subjects were 30 students of French, of various levels of proficiency, at the Open University (which means that they were probably British adults).<sup>234</sup> They were assigned to two groups of 15 each: the test group (TG) and a control group (CG). All of them were asked to write (at home) a short essay, in one and a half hours. “This essay was sent to the researcher, who took a photocopy and returned the original with no marking or comments on it.” (p. 64) After some time, the students were requested to look at their unmarked essay again, to “consider what improvements they could make [...] and to do a second draft”, which was again to be sent to the researcher. The difference between the two groups was that after the first draft the students of the TG were sent to a training course. The headwords of the different parts of this course are presented on one page of the article.

Bishop explains in detail the design of the test instrument. He decided to measure “Accuracy and Quality of Language”. As to accuracy, he adopted “a distinction between ‘mistakes’ and ‘errors’ [...]. The former were defined as “lower level inaccuracies correctable within the knowledge of the learner”, while errors were considered “unlikely to be correctable within the grammatical, lexical and idiomatic knowledge of the learner at this stage” (p. 64). As to the quality of the essay, the author lists several criteria, e.g. the combination of verbs and adverbs, the use of adverbial expressions, the correct use of the subjunctive and the use of complex sentences.

In both drafts of the essay, Bishop counted the number of words and divided this number by the number of inaccuracies (mistakes or errors) and by the number of quality features. For example, if an essay of 312 words contained 30 inaccuracies, the accuracy rating would be 10.4; and with 85 quality features, the quality rating would be 3.6. The higher the first rating and the lower the second one, the better the final score.

The results for each student of the TG, presented on p. 67, show great individual differences (for example, the length of the essay varied between 193 and 840 words). But obviously the most important data regard the differences between the two drafts:

- In the TG, the second version, on average, was 10% longer than the first one; and correctness and quality improved 14.3% and 11.8%, respectively.
- In the CG, correctness and quality improved only 1.5% and 2.2%, respectively.

Thus, apparently the results indicate that the dictionary skills training course improved the students’ performance in writing an essay.

However, the criteria of evaluation do not seem to be totally objective. Another problem is that the researcher was apparently the only rater.

### Głowacka (2001)<sup>235</sup> [Dziemianka & Lew (2006a)]

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<sup>234</sup> About Open University, cf. footnote 73.

<sup>235</sup> Dziemianko & Lew (2006a) provide the following bibliographical data: Głowacka, Wyszomira. 2001. Difficulties with understanding dictionary labels experienced by Polish learners of English using bilingual dictionaries. M.A. diss., Adam Mickiewicz University.

This study is summarized by Dziemianko & Lew as follows:

Głowacka (2001) looks into the difficulties that Polish learners of English experience with dictionary labels. Using a combination of a questionnaire and a test administered to 62 learners, Głowacka concludes that Polish learners have serious problems understanding typical dictionary labels. Further, and contrary to expectation, she finds that the provision of in-class instruction targeted at explaining dictionary metalanguage does not appear to improve the level of comprehension of dictionary labels.

### **Szymańska (2001)**

Please see subchapter 4.4.

### **Chi (2003)**

A shortened version of this doctoral thesis was published in the same year under the title “An empirical study of the efficacy of integrating the teaching of dictionary use into a tertiary English curriculum in Hong Kong”. The main part of an abstract of that book (abstract available at <http://hdl.handle.net/1783.1/1058>) reads as follows:

Through an empirical research design, this study explores the efficacy of teaching dictionary use explicitly to non-native learners through experience with a conventional English enhancement course at tertiary level in Hong Kong. The study was carried out with the use of tailor-made teaching materials on dictionary use items identified to be relevant to the needs of these tertiary students, and to the nature of the existing English course at the university which they were attending. Through statistical and qualitative analyses, the study proves that such an approach is effective in disseminating the knowledge and skills required of students in using English learners’ dictionaries to solve specified linguistic problems. Based on the findings, it is recommended that support and training should be provided to English teachers to ensure that they are conversant with the development of, and innovations in, English learners’ dictionaries.

According to Law (2009: 28),

Chi (2003) carried out a research project on students’ habits and choices when using dictionaries to assist their English learning, on the content and methodology to teach or learn dictionary use, and on the effectiveness of explicit teaching of dictionary skills for improving students’ reference abilities. 248 university students did the questionnaire, and 15 of them attended the interviews. [...] Her other research method was to teach students selected dictionary use items, and do pre-test and post-test with them.

Lew & Galas (2008: 1273 f.) state that Chi’s study “was limited to the following five areas of skills: selecting verb-noun collocations, recognizing style labels, extracting cultural information, alphabetical ordering, and recognizing phonetic transcription symbols”.

### Sánchez Ramos (2004)<sup>236</sup>

The author presents a proposal for the teaching of the use of EDs and other electronic tools, and reports on an investigation into the effectiveness of such a training course.

In chapter 4, she provides a “model of strategies of consultations in electronic dictionaries”. In chapter 5, she describes the “pedagogical treatment”, which consisted of a course directed to students of Translation and Interpretation at the Universidade Jaume I (Spain). This course (called *TRADUJI*) was administered via Internet. Chapter 6 deals with the “evaluation of the level of success of the suggested pedagogical treatment”. The evaluation was done by means of the following study:

Twenty-five Spanish students of Translation and Interpretation, whose FL was English and who were in the first part (“ciclo”) of their studies, participated in the *TRADUJI* training course, in which they were taught how to use EDs and tools such as monolingual electronic corpora and concordancers. Before and after the course, the researcher administered a test to verify the students’ lexical knowledge and use of look-up strategies. In addition, she employed “varied qualitative tools: direct observation, questionnaires, introspective and retrospective methods”. I cannot go into details here.

General results (p. 571 f.):

- “[...] before the pedagogical treatment, students rarely identified lexical problems [...]. [Afterwards] they were able to identify these problems [...], to offer appropriate solutions [...] and to use the relevant electronic tools systematically.”
- “At the beginning of the experiment, the students had problems with the meaning and use of words [...]. [...] there were also difficulties regarding the comprehension of entries [...], e.g. of symbols and abbreviations [...] and labels. After the course, significant advances were noticed in all these aspects.”
- “*TRADUJI* also improved the quality and quantity of search strategies in the different types of electronic dictionaries [...].”
- After the course, students “wanted more precision in their consultations, and this was reflected in the use of several dictionaries in a single search [...]. [...] students also consulted monolingual electronic corpora in order to supplement the information obtained in the dictionaries and thus increase their confidence in their final decisions”.

### Araújo (2007, 2007a)

Araújo (2007) is a master’s dissertation, the main part of which is the description of an empirical study described in Araújo (2007a). My own summary is based on that article.

The author wanted to investigate the effectiveness of “teaching the use of a monolingual English dictionary” (p. 254). The subjects were 24 Brazilians aged sixteen to fifty, who were studying English at a pre-intermediate level. They took a pre-test, the questions of which were based on the activities suggested in the MLD workbook. During the subsequent lessons, they were given information on that MLD and were taught how to use it. At the end of that “mini-course”, they put together a mini-dictionary of one hundred

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<sup>236</sup> This is a 767-page doctoral thesis. My summary is based on chapters 1 and 7, kindly e-mailed by the author in 2006 at my request. In 2007, she e-mailed the whole thesis in PDF. In Sánchez-Ramos (2007), she provides details of the data analysis, in which “descriptive and inferential statistics were used to obtain reliable results” (p. 274).

entries, providing the phonetic transcription, the part of speech and the definition (according to the context in which the words appear in their textbook). Finally, 16 of the 24 subjects took a post-test. Thus, the results are based on the data on 16 students.

Overall results:

- In most questions, the post-test scores were higher than those of the pre-test, but not significantly so.
- However, the mean of the sum of scores of all questions improved significantly (from 45.25 to 51.50).

### **Wang (2007)**

I quote some parts of the abstract (available at [http://etd.lib.nsysu.edu.tw/ETD-db/ETD-search/view\\_etd?URN=etd-0722107-192249](http://etd.lib.nsysu.edu.tw/ETD-db/ETD-search/view_etd?URN=etd-0722107-192249)) of this master's dissertation:

The purpose of this study is to carry out dictionary skills instruction in English classrooms and to assess the effect of dictionary skills instruction on reading comprehension of junior high EFL students in Taiwan.

The subjects in the study were 40 second-year junior high students of two classes from Tainan Municipal Chen-gong Junior High School. Each class was randomly assigned to the experiment group or the control group. The experiment group received dictionary skills instruction in English classes, and the control group did not. First, the forty subjects were asked to fill out a questionnaire about their dictionary use backgrounds. Then, they were asked to take a pre-test on their dictionary skills and local reading comprehension. After the pre-test, the experimental group received dictionary skills instruction during each class time for about 20 minutes. The instruction lasted about 3 weeks in the beginning of the second semester. Finally, the 40 subjects were asked to take a post-test on their dictionary skills and local reading comprehension.

As to the findings, Wang first points (in the abstract) to problems in the subjects' dictionary use. Then he claims:

According to the study, the use of dictionaries with proper dictionary skills instruction and enough practice could make a significant difference in the performance of local reading comprehension tasks.

### **Kambaki-Vougioukli (2008)**

Here are parts of the abstract retrieved from [http://www.iula.upf.edu/agenda/euralex\\_08/euralex0202fr.htm#s7](http://www.iula.upf.edu/agenda/euralex_08/euralex0202fr.htm#s7):

This is a longitudinal study, which started in 2004 and ended in 2005. There participated sixteen high-school pupils, same number of boys and girls, aged 13-15, of similar socioeconomic background, whose [mother tongue] is Turkish but living in Thrace, Greece and attending Greek State Schools rather than minority Public Schools. [...] Our aim is to reinforce their general linguistic competence and performance but also their strategic competence by encouraging them to use dictionaries when working at home, too. Furthermore, we are measuring their confidence levels before and after using dictionaries, at certain intervals over the whole period of the experiment. All the participants were given individualised instruction on dictionary use in pair and group work at certain intervals over the whole period of the experiment, too. [...] The

results justified our expectations as most the students that collaborated seem to be very comfortable with dictionary use and confident with the information they expect to find there.

### **Lew & Galas (2008)**

This paper is available on Lew's homepage ([http://www.staff.amu.edu.pl/~rlew/pub/Lew\\_publ.htm](http://www.staff.amu.edu.pl/~rlew/pub/Lew_publ.htm)). I will provide only the most relevant information.

The subjects were 57 "Polish final-year primary school children, aged between 12 and 13", attending English classes. They were assigned to two groups: an experimental group (28) and a control group (29). Despite their "high confidence in their reference skills reported in the accompanying questionnaire, they performed rather poorly on the pre-test" (p. 1273).

Following the pretest, the experimental group received the treatment in the form of direct teaching of dictionary reference skills. The dictionary skills training was given in 12 sessions spread equally over the course of four weeks. The material on dictionary use was integrated into the language course and taught in normal class time. The emphasis of the training program was the presentation and practice of different aspects of dictionary use, therefore each of the 12 sessions was aimed at presenting and practicing a different skill (p. 1275).

#### **Results:**

- "[...] the performance of the experimental group improved substantially, and significantly more than in the control group" (p. 1279).

## Chronology of empirical studies

The number immediately following the year of publication indicates the chapter or subchapter in which the study is summarized. Thus, the reader will know right away what kind of research was done.

In some cases, the summaries are to be found in more than one chapter, because the respective paper reports two or more types of studies.

It should be mentioned that, as can be seen in the “Synoptic Tables”, most of the studies investigated dictionary use in reception, production or vocabulary learning in a *foreign language*.

Barnhart (1962) 2.1

Gates (1972) 2.1

Turkish (1972) 3

Quirk (1973) 2.1

Hoffmann (1978) 2.1

Tomaszczyk (1979) 2.2

Baxter (1980) 2.2

Béjoint (1981) 2.2

Bensoussan, Sim & Weiss (1981/1984) 2.2, 4.1

Jain (1981) 5.1.1

Ard (1982) 3

Blohm (1982) 6.1

Calanchini (1982) 2.1

Cortelazzo (1982) 2.1

Hartmann (1982) 2.2

Kühn & Püschel (1982) 2.1

Bialystok (1983) 4.4

Chagunda (1983) 2.2

Chansou (1983) 2.1

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Hartmann (1983) Cf. Hartmann (1982)  
Macfarquhar & Richards (1983) 2.2  
Mitchell (1983) 3
- Bensoussan, Sim & Weiss (1984) Cf. 1981  
El-Sakran (1984) 2.2  
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Hatherall (1984) 3  
Jorgensen (1984) 5.1.1  
Miller & Gildea (1984) 3, 4.4 , 5.1.2  
Sora (1984) 2.2  
Tono (1984) 3  
Wiegand (1984) 2.1
- Eeds & Cockrum (1985) 4.4  
Griffin (1985) 2.2  
Heath & Herbst (1985) 2.2  
Kharma (1985) 2.2, 5.2.1  
Lantolf, Labarca & Tuinder (1985) 3  
Neubauer (1985) 3  
Okayama (1985) 3  
Rasmussen (1985) 2.2  
Wiegand (1985) 3  
Wiegand (1985a) 2.1
- Black (1986) 5.1.2  
Gray (1986) 2.1  
Krings (1986) 3  
Rampillon (1986) 2.2
- Coviello (1987) 2.2  
Herbst & Stein (1987) 2.2  
Iqbal (1987) 2.2, 3  
Kipfer (1987) 2.1  
Marello (1987) 2.2  
Miller & Gildea (1987) 3, 5.1.2  
Snell-Hornby (1987) 2.2  
Tomaszczyk (1987) 3  
Tono (1987) 5.1.1
- Bogaards (1988) 2.2  
Jackson (1988) 2.1  
Neubach & Cohen (1988) 3  
Summers (1988) 2.1, 2.2, 4.4, 5.1.2  
Taylor (1988) 2.2

Tono (1988) 3

Bareggi (1989) 3  
Battenburg (1989) 2.2  
Benson (1989) 5.1.2, 5.2.2  
Bräunling (1989) 2.2  
Diab (1989) Cf. Diab (1990)  
Hernández (1989) 2.1  
Ibrahim & Zalessky (1989) 2.1, 2.2  
Jacobs (1989) 7.3  
Ripfel (1989) 2.2  
Scott & Nagy (1989) 5.1.2  
Tickoo (1989) 2.2  
Tono (1989) 4.1

Atkins & Knowles (1990) Cf. Atkins & Varantola (1998)  
Benbow et al. (1990) 2.1  
Blachowicz et al. (1990) 3  
Bogaards (1990) 5.1.1  
Cumming, Cropp & Sussex (1990) 5.1.2  
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El-Badry (1990) 2.2  
Müllich (1990) 3  
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Starren & Thelen (1990) 5.2.1

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Bogaards (1991) 4.3.1, 4.4  
Bogaards (1991a) 5.1.1  
Kostrzewska (1991) 5.1.2  
Krantz (1991) 2.2, 3, 4.4, 6.2  
Leffa (1991) 2.2, 6.1  
McKeown (1991) 5.1.2  
Nesi & Meara (1991) 4.1  
Rashed (1991) 2.2  
Roby (1991) 6.1  
Tono (1991) 3  
Voigt (1991) 2.1

Al-Alami (1992) 4.4  
Andrade (1992) 2.2  
Bogaards (1992) 5.1.1  
Bogaards (1992a) 5.1.1  
Brito (1992) 2.1  
Laufer (1992) 5.1.2  
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Aust, Kelly & Roby (1993) 6.2

Frolova (1993) 2.2

Hulstijn (1993) 6.1

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Al-Khawaldeh (1994) 3

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Yokoyama (1994) 3

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Miller (1995) 4.1

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- Atkins & Varantola (1998) 2.2, 3, 4.1 , 4.3.1  
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- Azorín Fernández (2000, 2000a) 2.1  
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Boonmoh & Nesi (2007) 2.2  
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Costa (2007) 2.2  
Cote González & Tejedor Martinez (2007) 3  
Duran (2007) 6.2  
Durão & Zacarias (2007) 3  
Gomes (2007) 2.1  
He (2007) 3  
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- Al-Ajmi (2008) 5.1.2  
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- Dziemianko (2008a) 5.1.2  
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Grochocka (2008) 5.1.2  
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McCreary (2008) 4.2  
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- Chon (2009) 6.2  
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- Chen (2010) 6.2  
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Lew & Tokarek (2010) 6.2  
Loucky (2010) 2.2  
Müller-Spitzer (2010) 2.2  
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## Synoptic tables

In the following tables you will find some basic data for the empirical studies, the reports on which are summarized in chapters 2 through 7.

Acronyms:

EHs	Students of elementary or high schools
ESs	Elementary school students
HSs	High school students
Ts	Teachers
Us	University or college students (Not US for United States of America)

Observations:

Questions marks mean that I lack information on the respective item.

In the last column, I indicate only the main language about which users wanted information. In the case of BDs, there is of course another language, usually the users' L1.

## Chapter 2

(Questionnaire surveys)

### Subchapter 2.1

(Surveys of native speakers' use of monolingual dictionaries)

Author(s)	Number of informants	Class of informants	Language
Barnhart (1962)	99	American Ts	English
Gates (1972)	???	American biblical scholars	English
Quirk (1973)	220	British Us	English
Hoffmann (1978)	28	German (?) Us and Ts	German
Calanchini (1982)	???	Swiss Us	4 languages spoken in Switzerland

Cortelazzo (1982)	59	Swiss Ts	4 languages spoken in Switzerland
Kühn & Püschel (1982)	± 50	Ts of German	German
Chansou (1983)	55	French ESs	French
Descamps & Vaunaize (1983)	107	French	French
Greenbaum et al. (1984)	220	American Us	English
Wiegand (1984)	100	German Us	German
Wiegand (1985a)	220	German Us	German
Kipfer (1987)	292	American HSs	English
Jackson (1988)	86	British Us	English
Summers (1988)	???	British Us	English
Hernández (1989)	about 1,000	Spanish : 400 EHs, 550 Us, 50 Ts	Spanish
Ibrahim & Zalessky (1989)	219	French EHs	French
Benbow et al. (1990)	497	Mainly British or American professionals	English
Ripfel (1990)	89	Germans	German
Voigt (1991)	???	German Us and foreigners in Germany	German
Brito (1992)	???	Brazilian ESs	Portuguese
Wolf (1992)	288	Germans	German
Blok (1994)	???	Dutch EHs	Dutch
Azorín Fernández (2000, 2000a)	1,789	1,525 Spanish EHs, 264 Ts	Spanish
Candalija Reina & Marimon Llorca (2000)	???	Spanish EHs	Spanish
McKean (2000)	400	American Ts	English
Candel (2001)	180	129 French researchers in France, 51 “users of French” in Melbourne	French
Hass (2005)	427	Mainly Us at German universities, 71% native speakers	German
Azorín Fernández (2007) – cf. Azorín Fernández (2000, 2000a)			
Chatzidimou (2007)	714	Greek students and teachers: 192 ESs, 182 elementary school Ts, 340 Us	Greek
Gomes 2007	50	Brazilian elementary school Ts	Portuguese
Scherer (2008)	58	(German?) users of a German online MED	German

## Subchapter 2.2

(Surveys of the use of monolingual learners' dictionaries or of bilingual dictionaries)

<b>Author(s)</b>	<b>Number of informants</b>	<b>Class of informants</b>	<b>Class of dictionaries</b>	<b>Language</b>
Tomaszczyk (1979)	449	117 Us of various first languages, 167 Polish Us, 60 Ts of English, 105 translators	BD, MD	English, German, French, Russian
Baxter (1980)	342	Japanese Us	BD, MD	English
Béjoint (1981)	122	French Us	BD, MD	English
Hartmann (1982)	178	British: 60 Ts of German, 118 EHs and Us	BD	German
Chagunda (1983)	???	Foreigners in an English-speaking country	2 technical MDs	English (ESP)
Galisson (1983)	96	48 foreigners in France, 48 Americans	BD, MD	French
Hartmann (1983) cf. Hartmann (1982)				
MacFarquhar & Richards (1983)	180	Us from Asia and the Pacific in Hawaii	MD, MLD (about definitions)	English
Bensoussan, Sim & Weiss (1984)	427	417 Israeli Us and 10 Ts	BD, MD	English
El-Sakran (1984)	36	Egyptians in England	BD, MD	English (ESP)
Sora (1984)	115	Italian Us	BD, MD	English
Griffin (1985)	128	Foreign Us in the US	BD, MLD	English
Heath & Herbst (1985)	160	German Us majoring in English	MLD, MD	English
Kharma (1985)	284	Kuwaitis majoring in English	MLD	English
Rasmussen (1985)	280	Danish 13,5% francophones	a specific BD	French
Rampillon (1986)	360	German EHs	BD	English
Coviello (1987)	42	Italian Us	MD, BD	Italian, French
Herbst & Stein (1987)	131	Germans: 60 Ts of English, 71 Us	MLD, MD	English
Iqbal (1987)	725	Pakistani : 700 Us and 25 Ts	MLD	English
Marello (1987)	100	Italians: 42 Ts, 58 Us	BD	English
Snell-Hornby (1987)	35	German and Swiss Us	BD, MD	English
Bogaards (1988)	371	Dutch Us majoring in French	BD, MD	French
Summers (1988)	???	EHs and Us in several countries	a specific MLD	English
Taylor (1988)	122	Chinese Us	MLD (BD)	English
Battenburg (1989/1991)	60	Foreign Us in the US	BD, MLD, L1D	English
Bräunling (1989)	112	Ts of German	Valency MDs	German

Ibrahim & Zalessky (1989)	112	42 Japanese, 40 Chinese, 30 Americans	MD	French
Ripfel (1989)	279	German Us majoring in French (147) or English (132)	BD, MD	French, English
Tickoo (1989)	160	100 Ts in India and in Singapore, 60 Us in Singapore	MLD	English
Atkins & Knowles (1990) – cf. Atkins & Varantola (1998)				
Diab (1990)	426	Jordanians: 405 student nurses, 21 Ts	MLD	English
El-Badry (1990)	493	Arabs	BD	English
Krantz (1991)	106	Swedish Us	BD, MD	English
Leffa (1991)	51	Brazilian Us	ED	English
Rashed (1991)	???	Jordanian Us	Various	English (?), Arabic (?)
Al-Ajmi (1992)				
Tinnefeld (1992)	???	Germans: Us and students in language schools	???	English
Varantola (1992)	14	Translators	BD, MD	Various
Frolova (1993)	47	Russian and American Us	BD, MD	English, Russian
McCorduck (1993)	46	Foreigners in the US	MD	English
Houtman & Wouters (1994)	???	Dutch Us	???	???
Rehail (1994)	108	Jordanian Us majoring in French	BD, MD	French
Taylor & Chan (1994)	505	494 Chinese Us, 12 Ts	Hand-held EDs	English
Amaral (1995)	20	Brazilian Us	BD, MD	Spanish
Schafroth (1995)	114	German Us	BD, MD	French
Abu-Samak (1996)	???	Jordanian Ts of English	BD, MD	English
Mdee (1997)	70	56 English Us, 14 Tanzanian Us	BD	German, French, English, Swahili
Schmitt et al. (1997)	687	Foreigners in the US??	BD, MD	English
Zacarias (1997)	29	Brazilians	BD, MD	English
Atkins & Varantola (1998)	1.140	EFL learners from 4 language backgrounds	BD, MD	English
Bishop (1998)	50	British: 25 teens, 25 adults	BD	French
Chi (1998)	67	Chinese Us (of Hong Kong)	MD, BD	English
Li (1998)	801	Chinese people: 691 Us, 110 Ts	BD, MD	English
Potter (1998)	212??	Ts and learners of English	MLD (about examples)	English

Asher, Chambers & Hall (1999)	27 schools	Ts of L1 and L2 in Great-Britain	???	Various
Barnes, Hunt & Powell (1999)	100	Ts of British high schools	BD, MD	???
Böhner (1999)	271	German EHs	MLD, BD	English
Hartmann (1999)	717	700 English Us, 17 Ts	BD, MD	English and others
Nesi (1999)	35	English Ts	MD, BD	English e outros
Sobkowiak (1999)	???	Polish Us majoring in English	???	English
Stark (1999)	40	Mostly Us or EFL learners	MLD	English
Bishop (2000)	145	British	BD	French
Fan (2000)	1.076	Chinese Us (of Hong Kong)	LDT	English
Höfling (2000)	20	Various Brazilians	BD	English
Komuro & Yamada (2000)	99	Japanese Us	BD	English
Müller (2000)	36	Brazilian Ts	???	???
Tall & Hurman (2000)	1.601	British EHs	BD	French
Corpus Pastor, Leiva Rojo & Varella Salinas (2001)	271	Spanish Us (translation students)	BD, MD	English, French
Jakubowski (2001)	86	Polish HSs (learners of English ?)	BD, MD	English (?)
Winkler (2001) – cf. 6.2				
Winkler (2001a) – cf. 6.2				
Lew (2002)	712	Polish students and teachers	BD, MD	English
Nishimura (2002)	881	Japanese Us and Es	BD	English
Wingate (2002)	97	Chinese Us in Hong Kong	BD, MD	German, French
Assirati (2003)	64	Brazilian Us	BD	English
Huang (2003)	414	Taiwanese university English majors	MD, BD?	English
Nesi (2003)	32	Us, mostly Chinese	ED, PED	English
Machado (2003)	3	Brazilian adults	BD	English
Chow (2004)	???	Chinese HSs in Hong Kong	LDT	English
Conceição (2004)	51	Brazilian Us	BD, MD	English
Lew (2004) – cf. Lew (2002)				
Sánchez Ramos (2004a)	98	Spanish Us	BD, MD, ED	English, Spanish
Murath (2005)	194	Hungarian Us	BD, MD	German
Teixeira (2005)	286	Brazilian ESs	BD	Spanish
Höfling (2006)	150	Brazilian Us	MD, BD, LDT	English
Vital (2006)	361	Brazilian EHs	BD	English
Xu (2006)	367	Chinese Us	MLD, ED	English
Bettoni-Techio & Humblé (2007)	16	Brazilian EFL teachers	Various	English

Boonmoh & Nesi (2007)	1.241	“1,211 first-year non-English major students” and “30 experienced lecturers of English” in Thailand	PEDs and others	English
Costa (2007)	89	Brazilian ESs	BD, MD	English, Portuguese
Oliveira & Welker (2007)	40	Brazilian Us (translation students)	BD, MD	English, French
Ekwa Ebanéga & Tomba Moussavou (2008)	100	Gabonese Us studying in South Africa	Various	English, others?
Petrylaité, Vaškelienė & Vėžytė (2008)	88	Lithuanian Us learning ESP	Various	English
Ronald & Ozawa (2008)	???	FL students, non-native Ts of the FL, native Ts	PED	Various
Loucky (2010)	???	Japanese Us	Various EDs and online dictionaries	English
Koplenig & Töpel (2010)	684	Users of online dictionaries	Online dictionaries	German, English
Müller-Spitzer (2010) Cf. Koplenig & Töpel (2010)				
Frankenberg-Garcia (forthcoming)	211	Portuguese EFL learners	BD, MLD	English

### Chapter 3

(Studies on actual dictionary use)

(In the second column, the number in brackets indicates the number of analyzed protocols.)

Author(s)	Number of subjects	Class of subjects	Dictionary type	Circumstance of use	Language
Turkish (1972)	???	American ESs	L1Ds (school dictionaries)	???	English
Ard (1982)	2	Japanese, Arab	BD	Writing	English
Descamps & Vaunaize (1983)	59	French teachers, other professionals, house wives	L1D	Various	French
Mitchell (1983)	94	Children	L1D	Various exercises	English
Miller & Gildea (1984)	???	Children	L1D	Look up words and write sentences	English
Miller & Gildea (1987) – cf. Miller & Gildea (1984)					

Hatherall (1984)	???	British Us	BD, MD	L1-L2 translation	German
Tono (1984)	402	Japanese Us	BD	L2-L1 translation	English
Neubauer (1985)	22	Foreign Us in Germany	L1D	Writing	German
Okayama (1985)	1.055	Japanese HSs	BD	Reading	English
Wiegand (1985)	45	Us from several language backgrounds	mainly MD	L1-L2 translation	German
Tono (1988)	76	Japanese HSs	BD	Reading	English
Neubach & Cohen (1988)	6	Israeli Us	MLD, BD	Reading	English
Bareggi (1989)	70	Italian Us	MLD		English
Atkins & Knowles (1990) – cf. Atkins & Varantola (1998)					
Blachowicz et al. (1990)	???	Children	L1D	Look up words used in sentences	English
Diab (1990)	13	Jordanian student nurses	MLD	???"(diaries")	English
Müllich (1990)	108	German Us	MD	L2-L1 translation	French, English
Al-Besbasi (1991)	8	Arabs	BD, MD	L2-L1 translation	English
Tono (1991)	10	7 Japanese Us, 3 Ts	BD	L2-L1 translation	English
Nuccorini (1992)	16	Italians: 11 Us, 5 Ts	BD, MD	Various	English
Al-Khawaldeh (1994)	???	Jordanian HSs	???	Reading and writing	English?, Arabic?
Duvå & Laursen (1994)	34	Danish translation students	Various	Translation	French, Spanish
Nielsen (1994)	8	Danish advanced English majors	BD	Translation	English
Nuccorini (1994)	222	Italians	BD	L2-L1 translation	English
Yokoyama (1994)	24	Japanese Us	BD	Writing	English
Gu & Johnson (1996)	850	Chinese Us	MD?	Vocabulary learning	English
Jääskeläinen (1996)	24	Translators and others	BD, MD?	L2-L1 translation	English, French, Finnish
Atkins & Varantola (1997)	103	71 foreigners in Great Britain, 32 Finnish	BD, MD	L2-L1 translation, L1-L2 translation	English
Beech (1997)	19	Greek EHs	BD	Various	English
Christianson (1997)	51	Japanese	BD, MD	Writing	English

Atkins & Varantola (1998)	1.140 (723)	EFL learners from four language backgrounds	BD, MD	Various	English
Khanji (1998)	???	Jordanian Us	BD, MD	Translation	English
Li (1998)	61	Chinese Us	Various, mainly BD	Translation	English
Momoi (1998)	30	Japanese students: 25 Us, 4 HSs	BD	Writing	English
Diab & Hamdan (1999)	50	Jordanian Us	Various	Reading	English
Jensen (1999)		Dutch: 4 translators, 2 “laymen”	Various	L2-L1 translation	English
Corris et al. (2000)	76	“speakers, semi-speakers and learners of Australian Aboriginal languages”	BDs, trilingual dictionaries	Various	Australian aboriginal languages, English
Kobayashi (2000)	40	Japanese students in the US	BD	Strategies of/in vocabulary learning	English
Scholfield & Katamine (2000)	20	Arabic PhD students	BD	Strategies employed in a picture description task	English
Whyatt (2000)	???	Polish Us/translators?	???	Dictionary use in translation	English
Chin (2001)	???	Intermediate learners of Spanish	BD, MD	“Vocabulary learning strategies” used in a reading test	Spanish, English
Al-Ajmi (2002)	46	Kuwaiti Us	BD	L2-L1 translation	English
Nesi & Haill (2002)	89 (77)	Us of various language backgrounds	sobretudo MD	Reading	English
Nord (2002)	13	Translators of various language backgrounds	Various	Translation	English, French, German, Spanish
Nuccorini (2002)	“a small number “	Italian (?) “academics”	???	Composition writing	English
Livbjerg & Mees (2003)	10	Danish Us	BD, MD	Translation	English
Conceição (2004a)	14	Brazilian Us	BD?	Reading	English
Pieścikowski (2004)	???	Polish Us	BD, MD	Translation	English
Wingate (2004)	17	Chinese Us from Hong Kong	BD, MD	Reading	German
Frankenberg-Garcia (2005)	16	Portuguese Us	Various	L1-L2 translation	English
Lai (2005)	3	Taiwanese EFL learners	BD, MD	Reading	English

Ronowicz et al. (2005)	14 (9 / 6)	Translation students and translators	Various	L2-L1 translation	English, Japanese, Korean
Gomes (2006)	80	Brazilian learners of German	BD	Writing	German
Höfling (2006)	150	Brazilian Us	BD, MD, LDT	Reading	English
Azorín Fernández (2007)	67	Spanish HSs	L1 school dictionary	Various tasks	Spanish
Cote González & Tejedor Martinez (2007)	96 (+50 questionnaires)	Spanish	BD	Translation	English
Durão & Zacarias (2007)	5	Brazilian Us	BD	Writing	English
He (2007)	4	Chinese Us	Mainly BD	Translation	English
Loguercio (2007)	20	Brazilian Us	BD	Reading	English
Law (2009)	107 (4)	Chinese translation students in Hong Kong	BD	Translation	English
Nied Curcio (2010)	18	Italian Us	Various	Translation	German

## Chapter 4

(Studies on the effect of dictionary use)

### Subchapter 4.1

(Circumstance of use: Reading)

Author(s)	Number of subjects	Class of subjects	Dictionary type	Language
Bensoussan, Sim & Weiss (1984)	1.501	Israeli Us	BD, MD	English
Tono (1989)	32	Japanese HSs	BD	English
Nesi & Meara (1991)	148	Foreign EAP students in Great Britain	BD, MLD	English
Hulstijn (1993) – cf. 6(1)				
Knight (1994) – cf. 4.4				
Laufer & Melamed (1994)	122 [123?]	Israelians: 76 HSs, 46 Us	BD, MLD, LDT	English
Miller (1995)	22	American ESs	L1D	English
Grabe & Stoller (1997)	1	American linguist	BD	Portuguese
Laufer & Hadar (1997) – cf. Laufer & Melamed (1994)				
Atkins & Varantola (1998)	1.140	EFL learners of four language backgrounds	BD, MD	English
Bogaards (1998) – cf. 5(2)				
Coura Sobrinho – cf. 5(2)				

Fraser (1999) – cf. 4.4.2(2)				
Heinen (2000)	???	Dutch EHs	MD?	English
Liou (2000)	???	EFL learners	MD?	English
Albus et al. (2001) – cf. 5(2)				
Bogaards (2002)	27	Dutch HSs	2 German MLDs	German
Wingate (2002)	46 (+4)	Chinese Us from Hong Kong	BD, MLD	German
Hill & Laufer (2003) – cf. 6(2)				
Hayati & Pour-Mohammadi (2005)	45	Iranian intermediate EFL learners	BD, MD	English

## Subchapter 4.2

(Circumstance of use: Writing)

Author(s)	Number of subjects	Class of subjects	Dictionary type	Language
East (2005)	58	Hs, Us in New Zealand (native speakers of English)	BD	German
McCreary (2008)	???	American Us	L1D, MLD	English

Please see in 4.1:

Laufer & Melamed (1994) and Laufer & Hadar (1997).

Please see in 5(2):

Miller & Gildea (1984), Miller & Gildea (1987), Summers (1988), McKeown (1991, 1994), Laufer (1992), Laufer (1993), Cumming, Cropp & Sussex (1994), Nesi (1994), Nesi & Meara (1994), Nesi (1996) and Nesi (1998).

## Subchapter 4.3

(Circumstance of use: Translation)

Author(s)	Number of subjects	Class of subjects	Dictionary type	Language
<b>Section 4.3.1</b> (Language learners doing translations)				
Bogaards (1991)	58	Dutch Us	BD, MD, MLD	French
Bogaards (1994) – cf. 5(2)				
Nuccorini (1994)				
Atkins & Varantola (1998) – cf. 4.1				
Coura Sobrinho (1998) – cf. 5(2)				
Lew (2002)	712	Polish EFL learners	BD, MD, LDT	English

Raudaskoski (2002)	20	Finnish HSs	BD, LDT	English
Livbjerg & Mees (2003)	10	Danish Us	BD, MD	English
Babenko & Troschina (2004) – cf. 5(1)				
Lew (2004)	712	Polish EFL learners	Various	English
Laufer & Levitzky-Aviad (2006)	75	Israelis: 52 Us, 23 HSs	BD, LDT, ED	English
<b>Section 4.3.2</b> (Translators or translation students)				
Martin-Rutledge (1997, 1998) – cf. 5(2)				
Mackintosh (1998) – cf. 5(2)				
Nord (2002) – cf. chapter 3				

## Subchapter 4.4

(Circumstance of use: Vocabulary learning)

Author(s)	Number of subjects	Class of subjects	Dictionary type	Language
Bialystok (1983)	???	???	???	???
Miller & Gildea (1984) – cf. chapter 3				
Eeds & Cockrum (1985)	88	American ESs	L1D	English
Miller & Gildea (1987) - cf. chapter 3				
Summers (1988) – cf. 5(2)				
Bogaards (1991) – cf. 4.3(1)				
Krantz (1991)	52	Swedish Us majoring in English	BD, MD	English
Luppescu & Day (1993)	293	Japanese Us	BD	English
Al-Alami (1992)	???	Arab HSs	MD	English
Fischer (1994)	87	German HSs	MLD	English
Knight (1994)	105	American Us	BD	Spanish
Nist & Olejnik (1995)	186	American Us	L1D	English
Hulstijn, Hollander & Greidanus (1996)	78	Dutch Us	BD	French
Aizawa (1999)	308	Japanese HSs	BD	English
Fraser [Carol] (1999)	8	Francophone (Canadian?) Us	BD, MD	English
McCreary & Dolezal (1999) – cf. 5(2)				
Iwai (2000)	24	Japanese	BD	English
Dziapa (2001)	???	Polish EFL learners at beginner and intermediate levels	BD, MD	English
Szymańska (2001)	???	Polish HSs	MLD, BD	English

Ronald (2002)	1	Japanese Us majoring in English	MLD	English
Wingate (2002) – cf. 4.1, 5(2)				
Iu (2003)	193	Chinese HSs in Hong Kong	Various	English
Conceição (2004)	51	Brazilian Us	BD	English

## Chapter 5

(Studies on the use of specific components or features, or of specific dictionaries)

Author(s)	Number of subjects	Class of subjects	Dictionary type	Topic studied / circumstance of use	Language
<b>Actual use (sections 5.1.1 and 5.2.1)</b>					
Jain (1981)	???	???	MLD	Definitions	English
Jorgensen (1984)	40	Americans: 20 Us, 20 fourth grade children	L1D (school dictionary)	Definitions	English
Kharma (1985)	???	Kuwaiti Us majoring in English	MLD	Reference skills	English
Tono (1987)	129	Japanese Us	MLD, BD	Idiom look-up strategies	English
Bogaards (1990)	643	French and Dutch Us and HSs; learners of French and Dutch from various language backgrounds		Idiom look-up strategies	French, Dutch
Starren & Thelen (1990)	34	Dutch(?) translation students	MLD, BD, MD	Translation	English
Bogaards (1991a)	108	French: 60 Us, 48 HSs		Idiom look-up strategies	French
Bogaards (1992)	275	Dutch learners of French		Idiom look-up strategies	French
Bogaards (1992a)	62 (52)	French HSs		Idiom look-up strategies	French
Tono (1992)	109	Japanese students: 57 Us, 152 HSs	MLD	Effect of “menus”; L2-L1 translation	English
Hartmann (1994)	28	Foreign Us in Great Britain	LDT	Reading	English (and several first languages)

Köster & Neubauer (1994)	???	Us (learners of German)	MLD	???	German
Augst (1997)	±50	Germans	orthographic L1D	Consultations	German
Bogaards (1997)	???	French learners of Dutch, Dutch learners of French		Idiom look-up strategies	French, Dutch
Harvey & Yuill (1997)	211	Foreigners in Great Britain	MLD (COBUILD)	Consultations	English
Laufer & Kimmel (1997)	70	Israelis: 39 HSs, 31 Us	LDT	Effectiveness of LDTs	English
Bogaards (1998a)	45	Dutch students majoring in French		Class of words looked up in a reading exercise	French
Coura Sobrinho (1998)	17	Brazilian Us	a specific MD	Look-up behaviour in a reading exercise	French
Gonzalez (1999)	75 (?)	Foreign ESL students in the US	MD (BD)	Definitions	English
Wingate (1999)	4	Chinese Us	MLD	Consultations in a reading exercise	German
Babenko & Troschina (2004)	50	Russian Us	MLD	Effectiveness of an MLD in L1-L2 translation	German
Dziemianko (2004)	606	Polish students: 325 HSs, 281 Us	MLD	User-friendliness of verb syntax presentation	English
Thumb (2004)	18	Chinese Us	LDT	Look-up strategies in a reading exercise	English
Dziemianko (2008)	603	Polish students: 338 Us, 265 HSs	MLD	User-friendliness of presentation of grammatical information	English
Mieznikowski (2008)	118	Brazilian students: 76 ESs, 42 Us (English majors)	BD	Decoding; choice of correct translation	English
<hr/>					
<b>2) The effect of dictionary use (sections 5.1.2 and 5.2.2)</b>					
Miller & Gildea (1984)	???	American ESs	L1D	Definitions	English
Black (1986) – cf. Summers (1988)					
Miller & Gildea (1987) – cf. Miller & Gildea (1984)					
Summers (1988)	40 (?)	EFL learners	MLD	Definitions and examples	English

Benson (1989)	17	Russian and Ukrainian Ts of English	Dicionário de colocações	Effectiveness of a specific dictionary in the consultation of collocations	English
Scott & Nagy (1989)	???	???	L1D	Effectiveness of definitions	English
Kostrzewska (1991)	25 (?)	German Us	MLD	Effectiveness of different definition styles in reading and vocabulary learning	English
McKeown (1991)	85	American HSs	L1D	Effectiveness of different definition styles in encoding	English
Laufer (1992)	62	Isreali Us	MLD	Effectiveness of authentic and of constructed examples in c	English
Laufer (1993)	43	Isreali Us	MLD	Effectiveness of definitions and examples in decoding and encoding	English
McKeown (1993) – cf. McKeown (1991)					
Bogaards (1994)	613	Dutch HSs	BD	Effectiveness of the microstructure of a specific BD in L2-L1 translation	French
Cumming, Cropp & Sussex (1994)	85	Foreigners (from 26 language backgrounds) in the US	MLD	Effectiveness of different definition styles in decoding and encoding	English
Nesi (1994)	95	51 Portuguese and 44 Malayan students majoring in English	MLD	L1 influence on consultations in encoding	English
Nesi & Meara (1994)	52	Foreign Us in Great Britain	MLD	Effectiveness of different definition styles in encoding	English
Howarth (1995)	20	Foreign ESL learners in Great Britain	MLD	Use of usage notes	English
Nist & Olejnik (1995)	186	American Us	L1D	Influence of different definition styles and contexts on vocabulary learning	English
Nesi (1996)	40	Foreign Us in Great Britain	(MLD)	Effectiveness of examples in encoding	English
Martin-Rutledge (1997) cf. Martin-Rutledge (1998)					
Tono (1997)	57	Japanese Us	MLD	Effect of signposts (guidewords)	English

Bogaards (1998)	54	Dutch HSs	MLD	Effectiveness of access structure	English
Coura Sobrinho (1998)	12	Brazilian Us	MD	Effect of the use of a specific MD in decoding	French
Mackintosh (1998)	106	Canadian Us: 65 franco-phones, 41 anglophones	MD	Comprehensibility of definitions	French, English
Martin-Rutledge (1998)	90	Canadian Us: 48 franco-phones, 42 anglophones	BD	Consultation of examples in translation	French, English
Nesi (1998)	120	101 Us in Botswana, 19 Japanese Us in Great Britain	MLD	Effectiveness of entries (definitions and examples) of various MLDs in the writing of sentences and the identification of objects	English
McCreary & Dolezal (1999)	74	Foreign Us in the US	MD	Comprehension and retention of words with and without consultations (inferring)	English
Nesi (1999a)	1.500	EFL and ESL learners (ESs) in África and Jordan	MD	Effectiveness of different forms of presentation of grammatical information	English
Albus et al. (2001)	202	133 Hmongs in the US, 69 American students	MD	Effectiveness of a specific MD in decoding	English
Bogaards & Van der Van der Kloot (2001)	88	Dutch students: 59 HSs, 29 Us majoring in English	MLD	Effectiveness – in L1-L2 translation of verbs – of grammatical information provided in various MLDs	English
Ślotała (2001)	???	Polish	MLD	MLD's effectiveness in helping to locate cultural information.	English
Bogaards & Van der Kloot (2002)	117	Dutch : 33 HSs, 84 Us (56 of them majoring in English)	MLD	Effectiveness (in L1-L2 translation of verbs) of grammatical information provided in various MLDs	English
McCreary (2002)	207	American Us ("native English speaking Americans")	MD, MLD	Effectiveness of two definition	English
Purczyńska (2002)	15	Polish HSs	BD	Influence of dictionary examples on the students' choice of grammatical tense	English (?)

Wingate (2002)	99	Chinese Us: 13 in Hong Kong, 86 in Shanghai	MLD, BD	Effectiveness of two definition types	German
Dziemianko (2006) – cf. Dziemianko (2004) in 5(1)					
Dziemianko & Lew (2006) - cf. Lew & Dziemianko (2006a)					
Lew & Dziemianko (2006)	129	Polish “upper intermediate or advanced learners of English”	MLD, MD	Effectiveness of two definition types for recognizing part of speech	English
Lew & Dziemianko (2006a)	238	Polish intermediate EFL learners	MLD, MD	Effectiveness of two definition types for recognizing part of speech	English
Szczepaniak (2006)	143	Polish Us	MLD	Consultation of idioms; effectiveness of a specific MLD in the comprehension of idiom variants	English
Al-Bader (2007)	???	Kuwaiti Us	MLD	Effectiveness of definitions only versus definitions plus examples	English
Lew & Pajkowska (2007)	51	Polish HSs	MLD	Effect of signposts	English
Al-Ajmi (2008)	54	Kuwaiti Us	MLD	Effectiveness of examples (in OALD) in translation	English
Alonso Ramos (2008)	30	25 learners of Spanish, 5 Spanish native speakers	Dictionaries of collocations	Usefulness of two types of dictionaries of collocations (with and without semantic and syntactic information)	Spanish
Dziemianko (2008a)	448	Polish students: 252 English majors, 196 HSs	MLD(?)	Collective nouns, (un)countable nouns	English
Grochocka (2008)	60	Polish HSs	MLD, MD	Usefulness of the definitions of abstract nouns in an MLD and an L1D	English
Gumkowska (2008)	???	Polish EHs	MLD(?)	Helpfulness of pictures for word retention	English(?)
Dziemianko (2010a)	73	Polish advanced EFL learners	MLD, learner's thesaurus	Usefulness of two dictionaries for discriminating between synonyms	English

Lew (2010)	90	Polish EFL learners	MLD	Effectiveness of menus and shortcuts (signposts, guide words)	English
Lew & Radłowska (2010)	18	Polish HSs	MLD, Dictionary of collocations	Findability of collocations	English
Dziemianko (forthcoming)	“around 900”	Polish intermediate or advanced EFL learners	MLD	User-friendliness of noun and verb coding systems	English
Laufer (forthcoming)	95	ESL(?) learners, EFL learners in Israel (?)	MLD, LDT	Findability and retention of collocations	English

## Chapter 6

(Studies on the use of electronic glosses or electronic dictionaries)

Author(s)	Number of subjects	Class of subjects	Topic studied	Language
<b>1) Electronic glosses (subchapter 6.1)</b>				
Blohm (1982)	???	???	Effectiveness of glosses in decoding and word retention	English
Leffa (1991)	20	Brazilian Us	Effectiveness of glosses in decoding	English
Roby (1991)	???	American Us	Effectiveness of BDs, BEDs and glosses in decoding	Spanish
Hulstijn (1993)	82	Dutch HSs	Influence of task on consultations	English
Chun & Plass (1996)	160 (103)	American Us	Effectiveness of various types of glosses in decoding and word retention	German
Lomicka (1998)	12	Us American	Effectiveness of various types of glosses in decoding	French
Nagata (1999)	26	Us: 24 Americans, 1 Chinese student, 1 Korean	Effectiveness of various types of glosses in decoding and word retention	Japanese
Laufer (2000)	55	Israelian Us	Influence of electronic and paper glosses on word retention	English

De Ridder (2002)	60	Dutch Us	Influence of the visibility of glosses on consultation, comprehension and retention	French
Ernst-Martins (2003)	15	Brazilian Us	Effects of the use of glosses, BDs and MDs in decoding	Spanish
Yoshii (2006)	195	Japanese EFL learners	Effectiveness of L1 and L2 glosses (including pictures) in incidental vocabulary learning	English
Peters (2007)	84	Flemish learners of German	Effect of two enhancement techniques on L2 learners' look-up behaviour during a reading task and word retention	German
Yanguas (2009)	94	American Us (learners of Spanish)	Effect of different types of multimedia glosses on comprehension and learning of target words	Spanish
<hr/>				
<b>2) Electronic dictionaries (subchapter 6.2)</b>				
Krantz (1991) – cf. 4.4				
Aust, Kelly & Roby (1993)	80	American Us	Effectiveness of 4 dictionary types (BED, MED, BD, MD) in decoding	Spanish
Guillot & Kenning (1994)	???	???	Effectiveness of a specific MED in vocabulary learning	French
Knight (1994) – cf. 4.4				
Koga (1995)	40	Japanese Us	Comparison of the effectiveness of an ED and a PD in L2 reading	English (?)
Inami et al. (1997)	80	Japanese undergraduate and graduate students	Comparison of the effectiveness of an ED and a PD in vocabulary learning	English
Tang (1997)	274	254 Chinese ESL learners in Canada, 20 ESL teachers	Usefulness of BEDs	English
Iwamoto (1998)	10	Japanese (?) Us	Comparison of the efficiency of a PED and a PD for accessing the first meaning in an entry and the contextual meaning	Japanese (?), English (?)

Laufer & Hill (2000)	72	32 Israeli Us, 40 Chinese Us in Hong Kong	Influence of various information types on word retention	English
Nesi (2000a)	29	Foreign Us in Great Britain	Effectiveness of an MED and an MD in decoding	English
Tono (2000)	5	Japanese Us in Great Britain	Effectiveness of 3 BED types and of one BD in several tasks	English
Weschler & Pitts (2000)	???	Japanese EFL learners	Comparison of a BED and a bilingual PD as to lookup speed	English
Lemnitzer (2001)	???	Internauts	Statistics of look-ups in 3 German online EDs (1 monolingual and 2 BEDs)	German
Ling et al. (2001)	???	Internauts	Statistics of look-ups in online EDs	???
Winkler (2001)	100	Foreign Us in Great Britain	Use of 2 MLDs on CD- ROM	English
Winkler (2001a)	30	Foreigners in Great Britain	Use of a paper MLD and an MLD on CD-ROM	English
Chang (2002)	92	Chinese HSs	Effect of EDs and of marginal L1 glosses	English (?)
Ling et al. (2002)	???	Internauts	Statistics on online ED consultations	???
Loucky (2002)	43	Japanese Us	Use of BDs (one paper and 3 types of BEDs) in looking up words	English
Selva & Verlinde (2002)	67	Belgian (?) native speakers of Dutch (Us)	Effectiveness of a specific MED in 4 circumstances of use	French
Wingate (2002) – cf. 4.1, 5(2)				
Hill & Laufer (2003)	96	Chinese Us in Hong Kong	Influence of task on word retention; use of a specific BED	English
Koyama & Takeuchi (2003)	???	Japanese EFL learners	Effectiveness of the interface of an ED and a PD in word retention	English (?)
Osaki et al. (2003)	167	Japanese Us	“[E]ffects of an ED and a PD on accessing appropriate meaning, reading comprehension, and word retention”	English (?), Japanese (?)
Shizuka (2003)	77	Japanese Us	“[R]elative effects of an ED to a PD on empirical and perceived efficiency of meaning and example retrieval”	English (?)
Chun (2004)	54	Korean Us	Strategies in the use of EDs and PDs in L1 and L2 writing	English

De Schryver & Joffe (2004)	???	Internauts	Use of a specific online BED	English, Sesotho sa Leboa (a Bantu language)
Iso & Osaki (2004)	167	Japanese Us	[Replication of Osaki et al. (2003) study with the same subjects]	English (?), Japanese (?)
Koyama & Takeuchi (2004a)	72	Japanese Us	Look-up behaviour when consulting PEDs and PDs	English (?)
Sánchez Ramos (2004)	25	Spanish Us (translation students)	Effectiveness of instruction in the use of EDs and of other electronic tools	English
Bergenholtz & Johnsen (2005)	???	Internauts	Statistics of the use of a Danish online ED	Danish
Frankenberg-Garcia (2005) – cf. 4.3				
Johnsen (2005)	???	Internauts	Statistics of the use of 5 online EDs: Danish, English, German, Norwegian, polylingual	Various
Kobayashi (2005)	279	Japanese Us	Use of PEDs and PDs and its impact on lexical processing strategies	English
Kozlova (2005)	25?	Spanish EFL learners	Use of online EDs and causes of look-up success and failure	English
De Schryver et al. (2006)	???	Internauts	Statistics of the look-ups of frequent words in a Swahili-English online BED	English, Swahili
Kobayashi (2006) – cf. Kobayashi (2005)				
Komuro et al. (2006)	???	Japanese EFL learners	Use of ED and PD version of OALD7 and its effect on vocabulary acquisition	English
Laufer & Levitzky-Aviad (2006) – cf. 4.3				
Bergenholtz & Johnsen (2007)	???	Internauts	Statistics of purposes of consultation of 2 Danish online dictionaries	Danish
Duran (2007)	5	Brazilian translation students	Look-ups in various reference tools (mainly EDs) in a French-Portuguese translation	French, Portuguese
Müller-Spitzer (2008)	???	Internauts	Look-up behaviour in consultations of a German Online Vocabulary Information System	German

Lew & Doroszewska (2009)	56	Polish HSs (lower-intermediate EFL learners)	Lookup preferences and word retention in entries with animated pictures	English
Tan (2009)	???	???	Efficacy of an ED and a PD in helping learners differentiate senses of polysemous words	???
Tseng (2009)	38	Chinese (?) EFL learners (HSs)	Look-up behaviour in consultations of an online ED	English
Chen (2010)	85	Chinese Us	Effect of the use of PEDs and PDs on comprehension, production and retention of vocabulary	English
Dziemianko (2010)	64	Polish upper-intermediate and advanced EFL learners	Usefulness of the paper and the electronic version of an MLD in receptive and productive tasks as well as in retention of meaning and collocations	English
Lew & Tokarek (2010)	90	Polish EFL learners	Efficiency of entry menus (in BEDs) in translation	English
Verlinde & Binon (2010)	???	Internauts	Statistics of the use of the French <i>Base lexicale du français</i>	French
Zucchi (2010)	24	Brazilian Us majoring in Italian	Effect of the use of a simple BED and a large monolingual ED in word comprehension	Italian

### Subchapter 7.3

(Studies on the effect of the teaching of dictionary use)

Author(s)	Number of subjects	Class of subjects	Language
Jacobs (1989)	54	Thai Us majoring in English	English
Bishop (2001)	30	British learners of French	French
Głowacka (2001)	62	Polish EFL learners	English
Chi (2003)	15(?) (248 filled in a questionnaire)	Chinese Us in Hong Kong	English
Sánchez Ramos (2004) – cf. 6(2)			

Araújo (2007, 2007a)	24	Brazilian EFL learners	English
Wang (2007)	40	Chinese HSs	English
Kambaki-Vougioukli (2008)	16	Turkish HSs living in Greece	Greek, Turkish (?)
Lew & Galas (2008)	57	Polish ESs	English

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