

Monitoring Dictionary Use

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I SETTING THE STUDY IN CONTEXT

There are two direct routes to more effective dictionary use: the first is to radically improve the dictionary; the second is to radically improve the users. If we are to do either of these things – and obviously we should try to do both – the *sine qua non* of any action is a very detailed knowledge of how people use dictionaries at present. What do people actually do when they use a dictionary in the privacy of their own home? At the moment, we have no way of discovering this: dictionary use is a highly individual activity. We know from our own experience that the main steps include deciding which entry to look up, searching the entry for the information needed (usually not consciously articulated at this point), and either selecting what one hopes is the correct information, or moving on to another entry, perhaps in another dictionary. Yet there are many aspects of our use of dictionaries that we cannot describe in any detail. What kind of information do we usually look for? How do we decide where to look for it? What strategies do we adopt when the dictionary does not tell us exactly what we want to know?

A number of projects have had as their goal to add to the facts known about how people use dictionaries. Béjoint (1981, 1988, and 1989) discusses from the language teacher's perspective the way in which language students use dictionaries, and the skills they require if they are to do this effectively. Hatherall (1984) also studies the way in which students use dictionaries, and applies the knowledge gained to make some proposals about the contents and format of dictionary entries and about skills required by dictionary users. Hartmann (1989) discusses *inter alia* a taxonomy of dictionary reference acts and offers a flowchart for lexical look-up strategies.

Meara and English (1988) report on their use of a corpus of lexical errors in an attempt – supported by the Longman Group – at an analysis of the effectiveness of a learners' dictionary, the Longman Dictionary of Contemporary English. Bogaards's studies (Bogaards 1990 and 1992) describe various strategies employed by dictionary users in their search for multi-word expressions in bilingual dictionaries. Mitchell (1983a) analyses potential difficulties in using a dictionary, and offers a series of "assessment units" designed to help identify the aspects of dictionary use that school students find difficult; subsequently (Mitchell 1983b) she reports the findings from school trials of five of the assessment units. Laufer and Melamed (1994) examine monolingual, bilingual, and "bilingualized" dictionaries from the point of view of how effective these are, for what purposes and for what type of users.

The EURALEX and AILA Research Project into Dictionary Use described in Atkins *et al.* (1987), Atkins and Knowles (1990), and Atkins and Varantola (1998), consisted of a study of

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dictionary use by many different types of user in four linguistic communities. It concentrated on the effectiveness of dictionary use and the factors which contribute to this, and made it clear that while it was possible to tell when someone had taken the correct information from a dictionary, and when they had not, it was not possible to know how this came about. Further research was needed into what people actually do when they consult a dictionary.

1.1 The EURALEX Workshop on Dictionary Use (Oxford 1991)

This paper reports primarily on a methodology devised to record just that: what people do when they consult a dictionary. We give a detailed account of the process of monitoring dictionary use, and include the documents devised for this purpose, and describe the data gathered by this means. Looking at some questions to which answers are needed if the true process of dictionary consultation is to be described, we draw on the results of two applications of the methodology, one at the EURALEX Workshop on Dictionary Use held in Oxford in September 1991¹ and the other carried out by Varantola among students of translation at the Department of Translation Studies, University of Tampere, in the spring of 1993. Atkins and Varantola (1992) and Varantola and Atkins (1993) gave preliminary reports on this work. The methodology was subsequently applied in a third study carried out by Kristen Mackintosh under the supervision of Ingrid Meyer at the University of Ottawa, and described in Mackintosh's MA thesis.

Our aim was to monitor the dictionary look-up process in as natural a situation as possible. In other words, we wanted to find out what people really do when they use a dictionary to solve a linguistic problem, in this case when trying to translate a text either out of or into their native language. Our study, then, is a first attempt to look at this very complex process in some detail. It is the paper equivalent of the "think-aloud" protocol discussed in, for instance, Krings (1986). The "paper approach" adopted in the present study not only facilitated the collection of similar information from a much larger group of people, but also structured the information in such a way as to allow it to be collated in an electronic database.

We tried to record step by step what went on when people turned to a dictionary for help with a problem of translation. We did not attempt to discover in these experiments how "successful" the look-ups were, by rating the choices made as correct or incorrect, as in normal circumstances dictionary users translating into a foreign language rarely know immediately whether they have got the correct solution. However, they often know if they feel satisfied with the information they got. For our purposes, then, it was appropriate to record the level of user satisfaction after each search.

Since our focus was on the strategies of dictionary use and not on the dictionary users' skills in translation, we did not ask the participants to produce a written translation, simply to look up any expressions they felt were necessary to allow them to translate the passage. We set no targets for completion, and few participants went through the whole text: most concentrated on a thorough preparation of a relatively short passage. The participants worked in pairs, one

¹ We want to thank all those who contributed to the EURALEX Oxford workshop: those who helped to organize it, particularly Oxford University Press who provided secretarial facilities and on whose premises it was held; the participants; the publishers who generously donated the dictionaries which were used there; and Henri Béjoint and his students at Université Lyon-Lumière for help with devising the forms and testing the prototypes. Our thanks go too to the Tampere students who carried out the second experiment, to Patricia Thomas for providing additional data, and to John Atkins for comments on an earlier version of this paper and valued help with its production. Finally, we are grateful for the meticulous constructive comments which we received from Robert Ilson and from our two, formerly anonymous, reviewers, Hilary Nesi and Ingrid Meyer, and one still anonymous statistician-reviewer. Any errors, misinterpretations, and infelicities which remain are entirely our own.

partner using dictionaries, and the other recording every step of this activity on forms designed for this purpose. The data so gathered was keyed into a database held in dBaseIII Plus; it was subsequently transferred into a Reflex database for ease of cross-tabulation. The unrepresentative nature of the participants group (there were no naive dictionary users amongst them) means that the data tells us, not about how the average dictionary user behaves, but how the skilled dictionary user solves problems. However, the database, which records details of 1,000 dictionary look-ups made by 103 people, throws up a number of extremely interesting questions both for teachers of dictionary skills and for lexicographers, by revealing individual strategies for handling frustrating situations. We show how the methodology described in this paper may be used to provide answers to some basic questions about dictionary use, including:

- how did people consult dictionaries?
- what kind of information were the users looking for?
- what was the most helpful component in the dictionary entry?
- did the users find what they were looking for?
- were people satisfied with what they got?
- what did people do when frustrated?
- when did people choose to use an L2 monolingual dictionary?

2 METHODOLOGY

The database which will be queried later in this paper records the results of studying the two groups mentioned above, which we shall call the Oxford group and the Tampere group. Before describing the methodology applied, it is appropriate to set these two studies in context.

The 71 Oxford Workshop participants were all experienced dictionary users, many of them lexicographers: 38 people had English as their mother tongue (L1), six German, five Danish, five French, three Norwegian, three Spanish, two Dutch, two Swedish, and one each Czech, Hungarian, Italian, Korean, Polish, Russian, and Turkish. 34 participants assessed their command of their selected L2 as “advanced”, 23 as “intermediate”, 11 as “beginner”, and three did not specify. They were given the choice of translating from L1 into L2 (mother tongue into foreign language) or vice versa. There were over a hundred dictionaries available for them to choose from, and they were encouraged to use as many as they wanted. They could also choose the translation text from among three texts of varying levels of difficulty (previously assessed as “easy”, “intermediate”, or “difficult” by experienced language teachers)² in any of the languages represented at the workshop. The participants were encouraged to choose an L1–L2 translation task, and one that looked difficult to them. 54 did choose an L1–L2 translation, the other 17 working from L2 into their own language. Every translation task involved English as one of the languages.

In the Tampere experiment the methodology was basically the same. The main differences were that the 32 Tampere participants were all Finnish speakers, and all using the same Finnish text and translating it into English (L1–L2). These were students following an intermediate course in L1–L2 translation. A separate group of students (following a lexicography course) acted as recorders. Six dictionaries, one two-volume bilingual and four English monolingual, were available.

² The choice was included in order to make the translation task more natural, since the participants’ knowledge of the various target languages was unpredictable: had everyone used the same text the results of the study would have been just as informative, but the process would have been less enjoyable for those who took part.

The methodology described in this section is suitable for any group of participants, whatever their languages or linguistic knowledge, provided that the dictionaries are being used for the purpose of translation into or out of a foreign language. The first task of the project was to gather the minimum information about each participant that would allow a sensible assessment of the results, and a form (“Cover Sheet”, in Appendix 1) was devised to record this. The participants were then divided into pairs consisting of a “dictionary user” and a “recorder”; the dictionary user selected a passage for translation, chose the dictionaries to be used, and started on the translation; the recorder recorded each step of the operation on a “Recording Sheet” (shown in Appendix 2). In preparing the recording sheets we relied heavily on our experience in teaching translation studies (Varantola) and in practical lexicography (Atkins).

2.1 The user profile: the Cover Sheet

For each dictionary user in the experiments there was a Cover Sheet, which headed the data produced by that person. This form (see Appendix 1) is almost self-explanatory.

The square in the top right hand corner, entitled “Dictionary User’s Badge Number”, asks for the unique identifying number which was assigned to every participant, in the form of a number on the name badge they received. The forms otherwise remained anonymous: no participant was asked for his or her name.

Question 1 asks for information about the dictionary users’ mother tongue.

Question 2 asks for the users’ own assessment of their level of competence (beginner, intermediate, advanced) in the L2 of their choice, regardless of whether they are performing an L1–L2 or L2–L1 translation task.

Question 3 relates to the actual translation task being performed.

Question 4 asks for information about the language of the translation passage selected; the column headed “Difficulty” refers to the three levels of assessed difficulty of the passages available.

Question 5 asks for information about all the dictionaries that were used in the course of the translation work being recorded. This was principally to allow the database to distinguish between monolingual and bilingual dictionaries. It also made it possible for the results of any particular search to be checked out against the dictionary being used; this may be followed up at a later stage, if it proves a promising avenue of research.

This form is of necessity brief: time was short, and as much as possible had to be devoted to the business of recording the steps in the look-up process. For that reason, the participants had to assess their own linguistic competence in their chosen L2, and this is rather unsatisfactory. A more objective method of assessing L2 competence would have been preferable. The research project described in Atkins and Knowles (1990) contained a one-hour “Placement Test” which all participants completed, and which allowed for an objective assessment of their competence in L2 (which for all of them was English). Lack of a common L2 made such an assessment impossible in Oxford, even had there been time. In Tampere, no such assessment was required, as the group was homogeneous: they were all students of translation studies with similar advanced linguistic skills.

Our determination to keep the Cover Sheet short³ prevented us from eliciting other facts about the participants that might have been interesting: whether they had ever received any training in the use of dictionaries; whether they had actually used a dictionary in the past

³ The research described in Atkins and Knowles (1990) elicited a much more detailed user profile.

month; whether they were professional linguists (translators, interpreters, language teachers, lexicographers etc.) or not. However, the minimalist Cover Sheet served its purpose well. The question which gave the most trouble was Question 5: many people did not manage to identify the dictionaries accurately enough for it to be clear which version (standard, concise etc.) or edition of the named dictionary was being used.

2.2 The dictionary searches: the Recording Sheets

The two Recording Sheets are shown in Appendix 2: one is for L1–L2 and the other for L2–L1. The slight difference is to be found in the options to choose from in Question 4, which relates to the reason for the look-up. These forms seek detailed information about what was going on during the use of dictionaries as a translation aid. The instructions on how to record this (the “Recorder’s Notes”) are included in Appendix 2.

It is important to distinguish between what was called a “look-up” and a “search”. A look-up, as the word implies, designates the looking up of one entry, once, in one dictionary. Every time another headword was turned to, whether in the same dictionary or in another one, a new look-up started. The term “search” designates the group of look-ups (or single look-up) relating to one specific problem in the translation passage; a search could lead from one dictionary to another and back to the first, and all of these look-ups would be recorded as part of the same search. When a new problem was broached, a new search started.

The Recording Sheet was used to record details of a single look-up, and every look-up had its own Recording Sheet. A brief account follows of the contents of this form (see Appendix 2).

The box in the top right corner once again contains the participant’s unique identification number. This is used to link in the database the two sets of data, User Profile (from the Cover Sheet) and Dictionary Use (from the Recording Sheets). The box below it holds (in the left section) the Search Number and (right section) the Look-up Letter. These are assigned in chronological order by the person recording the look-up. Thus the first search is number 1, and the first look-up of each search is A. “3B” in this box therefore indicates that the look-up being recorded on the form is the second look-up (“B”) of the third search (“3”) carried out by one particular participant.

Question 1 asks for a statement of the expression which made the participant go to the dictionary in the first place. Apparently no one had any problems with this question, and the information given turned out to be correct when it was checked.

In **Question 2**, the users were asked to identify the actual dictionary being used in that particular search, by the identification letter assigned to it on the Cover Sheet (A–D). When the database was keyed, the information given here was converted into a unique number identifying each individual dictionary; this also indicated whether the dictionary in question was bilingual, monolingual for learners, or monolingual for native speakers, and what the language(s) involved were.

Question 3 asks for information about the headword of the entry to which the users turned in this particular look-up.

Question 4 proved one which gave some participants problems, although the great majority answered it competently. It offers options on the reason for which they had turned to the dictionary. Was it, for example, because they simply had no idea how the expression was rendered in the other language? Or was it that they had some idea, but wanted reassurance? Another possible reason for the dictionary look-up, which applies only to a translation into a foreign language (L1–L2), was a need for information about a foreign word; this information

could relate to the word's grammar, spelling, collocational options, register, style, regional variety, or other aspects of its use.

Question 4 was problematic for the recorders and participants because it gave too many alternatives to choose from; dictionary consultation is complex, and many participants (despite being asked for a single answer) gave several alternatives in their response. It would have been simpler, and the answers more informative, if this question had asked for the *principal* reason for which the dictionary was consulted.

In **Question 5**, participants were asked whether they thought they had unequivocally found what they were looking for (“Yes”); if they had some reservations about it they responded “Yes, but”; if they had not found it, they answered “No”. It should be noted that no attempt was made to discover whether the participants were correct in their estimate of the situation.

Question 6 was used in an attempt to discover which (if any) component of the dictionary entry had produced the useful information, and some components were suggested as an indicator of the kind of response expected. Here again, the question obviously proved difficult to answer, and might have produced clearer responses if participants had simply been asked to name the single part of the entry that had been most helpful.

Question 7 sought to discover what the dictionary user did next, which of course depended on the outcome of the current look-up: the options were to choose a translation and end the search, or to continue it either by looking up another entry in the same dictionary or by moving to another dictionary. One omission in **Question 7** showed up as soon as queries started to be made to the database: **Question 7** should have included the option “moving to an entry in a different type of dictionary”. Given the current structure of the database, it is not possible to infer this fact by cross-tabulation of other responses.

If they moved to another dictionary, they were asked in **Question 8** to explain this move; this could be the result of many different factors: lack of any information or adequate information in the first dictionary, unintelligibility of the first dictionary, or sheer lack of confidence in the information offered. In the event, this question provided the least variation in response of all the questions: the great majority of participants gave as their reason for moving on the fact that they needed more information about the point that had puzzled them in the first place (“B”).

Question 9 invites an account of the satisfaction level of those who were ending the search. Were they convinced that they had got the right information, or doubtful about this, or were they sure they had not been successful?

Question 10 offers space for further comments: most of those proved to relate to the user's needs for a different type of dictionary, or simply for a better dictionary of the same type as the one being used.

To summarize: although the questionnaire proved to have some minor shortcomings in practice, the Cover Sheet and Recording Sheets proved adequate for their purpose: there were few spoilt answers. Some of the questions could be fine-tuned for a homogeneous group, but there is a nice balance to be maintained between tedious hair-splitting and gathering a sufficient amount of useful information to form the basis of constructive thinking about dictionary use.

3 DATABASE QUERY: HOW DO PEOPLE CONSULT DICTIONARIES?

The information collected by this method lends itself to a detailed study of the way in which individuals use their dictionaries. Using a statistical program to query the database, we asked questions about the translation problems that sent people to their dictionary, the kind of information they were looking for, whether or not they found it and if so in what section

of the dictionary entry, the strategies they used when frustrated, and what they felt about the experience: in Sections 3–9 we discuss in some detail the information which the database can provide in answer to these questions. The full database holds the results of both the Oxford and Tampere experiments, but when the different nature of the two groups appeared to affect the interpretation, the results from the two sources are discussed separately.

In this section, we examine three fairly typical instances of dictionary use, and comment briefly on the strategies being employed.

The fact that the database tells us exactly what dictionary was being consulted at any given moment, and exactly what the object of the search was, allows us to reconstruct the situation in considerable detail, resulting in information which should be of particular interest to teachers wishing to learn how their students actually use their dictionaries, as a preliminary to teaching dictionary skills.

The 574 searches recorded in the database involved 1,000 look-ups, and each was subtly different from every other. The method of enquiry allows each of these to be studied in great detail, as may be seen from the following case studies, which are included to give some idea of the potential of this type of database query.

3.1 Case study: single-word target not in the dictionary

We start with the classic case of a dictionary user hunting in vain for an item in a dictionary, searching for information in two L2 monolingual dictionaries as well as in both directions of a bilingual dictionary.

A Danish participant wanted to know what *to'er* was in English. (This designates an apartment with two rooms; the English equivalent would be something like “two-roomer”, which is not at all as established as the Danish term, and which one would not expect to find figuring explicitly in any dictionary.) An additional problem was that *to'er* is a colloquial expression; an attempt at paraphrase in English would probably have resulted in **“two-er”*, and the user was rightly wary of this. The search consisted of five look-ups.

Look-up 1

Looked up: *to'er* in Danish–English bilingual dictionary

Found: *to'er* was not in the dictionary

Look-up 2

Looked up: *toværelses* (= “two-room flat”, unmarked for register) in the same bilingual dictionary

Found: the entry exists (see Figure 1), but contains no information about informal variants in English; the asterisk before the last phrase is a device used in this particular dictionary to indicate an untranslated example.

toværelse(r)s adj.: ~ *lejlighed* two-room flat; (amr.) three-room apartment (*idet køkkenet regnes med som værelse i USA*); * a two-roomed house.

FIG. 1 Entry for *toværelses* in Danish–English dictionary

Look-up 3

Looked up: “two-room flat” (gleaned from Look-up 2) in English monolingual dictionary A (a desk-size native-speaker dictionary)

Found: “two-room flat” was not in the dictionary

Comment: presumably the Danish user was hoping to find an informal English synonym for “two-room flat”

Look-up 4

Looked up: “two-room flat” in English monolingual dictionary B (also a desk-size native-speaker dictionary)

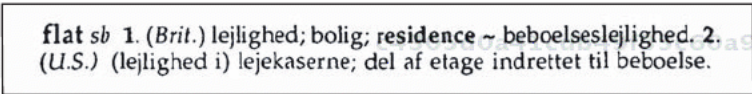
Found: “two-room flat” was not in the dictionary

Look-up 5

Looked up: “flat” in English–Danish bilingual dictionary

Found: the entry exists (see Figure 2), but contains no information about colloquial variants of the English term

Comment: The search ended there, leaving the user frustrated.



flat sb 1. (Brit.) lejlighed; bolig; residence ~ beboelseslejlighed. 2. (U.S.) (lejlighed i) lejekaserne; del af etage indrettet til beboelse.

FIG. 2 Entry for noun *flat* in English–Danish dictionary

3.2 Case study: Multi-word target partially in the dictionary

An English participant wanted to find the French equivalent of “low wage earner”. The search (using two bilingual English–French dictionaries) consisted of five look-ups:

Look-up 1

Looked up: “low” in English–French bilingual dictionary A

Found: the entry exists (see Figure 3), but “low wage earner” is not explicitly given



low...

(c) *i wage, rate bas (f basse), faible; price bas, modéré, modique...*
people of ~ income les gens aux faibles revenus;...

FIG. 3 Extract from *low* entry in English–French dictionary A

Look-up 2

Looked up: “wage” in the same bilingual dictionary (A)

Found: no satisfactory answer; although the dictionary entry (see Figure 4) includes the compound item “wage earner” with two additional examples of its use, it does not include the phrase “low wage earner”.

Comment: “low wage earner” was not in this dictionary as a translated item, although there is a section (shown in Figure 3) in the entry for “low” where the relevant sense of this adjective is extensively translated, and which includes as its very first collocating noun the word “wage”. The anglophone user had described himself or herself as having “advanced” competence in French, and therefore must have realized that it is impossible in that language to put together “salarié” and “bas” to form the equivalent of “low wage earner”, because of course the constituents of the English phrase are “((low wage) earner)”. A low wage earner is a “salarié” whose “salaire” is “bas”. Spotting “il est bien payé” given as a translation

wage ... 1 *n* salaire *m*, paye *f* or paie *f*; [domestic servant] gages *mpl*. hourly/weekly ~ salaire horaire/hebdomadaire; ... he gets a good ~ il est bien payé, il a un bon salaire; ... 2 *cpd*: ... **wage earner** salarié(e) *m(f)*; she is the family wage earner c'est elle qui fait vivre sa famille or qui est le soutien sa famille; we are both wage earners nous gagnons tous les deux notre vie; ...

FIG. 4 Extract from *wage* entry in English-French dictionary A

of “he gets a good wage”, the user might have given up at this point and composed some kind of paraphrase of “low wage earners” such as “ceux qui ne sont pas bien payés”, but instead chose to continue the search. It is conceivable that the user’s behaviour in this instance was influenced by the abnormal circumstances of the dictionary use: despite our attempts to reproduce as far as possible a natural use of dictionaries, an experiment like this one cannot of course be completely faithful to the real-world event in all aspects of the process.

Look-up 3

Looked up: “earner” in the same bilingual dictionary

Found: the word was not in the dictionary

Look-up 4

Looked up: “wage” in another English–French bilingual dictionary (B)

Found: here again (see Figure 5) “wage earner” was in the dictionary, but no indication of a way of translating “low wage earner”.

wage ... 1 *n* salaire *m*, paye *f* or paie *f*; [servant] gages *mpl*. hourly/weekly ~ salaire horaire/hebdomadaire; ... 2 *cpd*: ... **wage earner** salarié(e) *m(f)*; the family wage earner le soutien de la famille; ...

FIG. 5 Extract from *wage* entry in English-French dictionary B

Comment: This dictionary was an abridged version of the previous bilingual dictionary consulted during this search: an indication of either extreme naivety or extreme desperation on the part of the user. There were many different bilingual and monolingual French and English dictionaries available in the room, and it is hard to see a logic in searching an abridged dictionary for an item which did not exist in its unabridged version.

Look-up 5

Looked up: “earner” in the second bilingual dictionary (B)

Found: the word was not in the dictionary

Comment: At the end of this search the user noted that he or she would have to resort to a paraphrase. This decision was clearly the correct one, and the delay in making it is difficult to understand.

3.3 Case study: idiom target, partially in the dictionary

An English user wanted to find out how to adapt the German equivalent of the English idiom “to put all one’s eggs in one basket”, in order to put into German the concept expressed in the sentence (on the topic of nuclear versus fossil fuels) “Even the most ardent nuclear fan would

not wish to put all our eggs in the nuclear basket". The search consisted of three look-ups, all in the same bilingual dictionary.

Look-up 1

Looked up: "put" in an English–German bilingual dictionary

Found: "to put all one's eggs in one basket" is perhaps understandably not to be found in the entry for "put", which is too long to cite here, and which contains virtually no idioms

Look-up 2

Looked up: "basket" in the same bilingual dictionary

Found: this entry contained no idiomatic material either

Look-up 3

Looked up: "put" again, in the same bilingual dictionary

Found: still no success. Search abandoned.

Comment: Here, instead of looking under "egg", which seems the obvious next step (and the idiom is actually there, in this dictionary), the user returned to "put" and presumably read the very long entry more carefully.

3.4 What a search involves

A careful study of individual searches, such as those described above, gives some idea of what is involved in consulting a dictionary: for instance, these case studies throw some light on dictionary users' strategies for handling the frustrating situation of not finding what you want in a dictionary entry. Sometimes the tactics employed (such as those in 3.1) are sophisticated and sensible; sometimes (as in 3.2) with the benefit of hindsight the user might have wished to give up earlier; sometimes (as in 3.3) a more intelligent search strategy would have found the item in the dictionary. (At the very least, 3.3 makes a good case for the teaching of dictionary skills.)

The methodology devised for this experiment is thus powerful enough to allow language teachers to investigate in some depth the way their students use dictionaries. We shall now take a brief look at the broader picture.

TABLE 1 Length of searches in terms of number of look-ups

Number of look-ups in the search	Number of such searches	Percentage of total
1 look-up	309	57%
2 look-ups	133	25%
3 look-ups	46	9%
4 look-ups	25	5%
5 look-ups	14	2.6%
6 look-ups	6	1.1%
7 look-ups	3	0.6%
8 look-ups	1	0.2%
Total	537	~ 100%

The 103 dictionary users (Oxford and Tampere combined) managed to complete exactly 1,000 dictionary look-ups during the time they had at their disposal. All the look-ups by one

individual with the object of finding a translation for one particular expression in the text formed one “search” in our experiment.

Altogether, 574 searches were recorded. In other words, the users deployed 1,000 look-ups in trying to solve 574 problems. Of the 574 searches, 37 ended prematurely when time was called at the end of a session. The actual length (in number of look-ups per search) of the remaining 537 searches recorded in the database was as shown in Table 1.

Table 1 shows that more than half the searches recorded (57%) consisted of a single look-up, but one out of the 537 comprised eight separate dictionary operations.

Unfortunately, the way in which we keyed the information into the original dBaseIII Plus database does not allow us to extract figures relating to the sequence of various types of look-ups within a search: it is for example impossible for us to say from the database in its current format what the predominant patterns were in the searches recorded there. Without much detailed effort and manual re-ordering of our database, we cannot check our hypothesis that many searches which began with a quest for a direct L2 translation changed into a secondary hunt for confirmation of this, or for grammatical or collocation information about that translation. Nor will the database tell us whether the searches accounted successful by the searchers actually delivered the appropriate information, as pointed out above. We cannot therefore identify truly successful searches, simply those that the users thought were successful.

One of the things the database can, however, tell us is something about how the total number of look-ups breaks down among the various types of users.

The Oxford group contained 34 advanced L2 speakers, 23 intermediate, 11 beginners and three unspecified; the Tampere group consisted of 32 advanced L2 speakers. Contrasting the Oxford users only, according to their L2 skills, Table 2 shows the mean number of look-ups per user of each type.

TABLE 2 Number of look-ups according to users' L2 skills

Groups of users according to L2 skills		Total number of look-ups per group	Mean number of look-ups per group
Advanced	34 users	239	7.03
Intermediate	23 users	192	8.3
Beginners	11 users	62	5.6
Unspecified	3 users	17	—
Total	71	510	7.2

It might be concluded that the Advanced users with a mean of 7.03 look-ups per user worked more slowly than the Intermediate group, where the mean number of look-ups per user was 8.3. However, this conclusion would be valid only if all participants spent the same amount of time as users (as opposed to acting as recorders). This was not the case, as the chart in Figure 6 shows.

From Figure 6 it may be seen that two participants performed only one look-up each, and at the other end of the scale seven participants performed 12 or more look-ups each during the session. It is clear from this disparity that all the participants did not spend the same amount of time as dictionary user (as opposed to recorder). Some clearly must have performed as the dictionary user for the bulk of the time available. This means that the figures in the right-hand column of Table 2 (“Mean number of look-ups per group”) is not informative. However, the

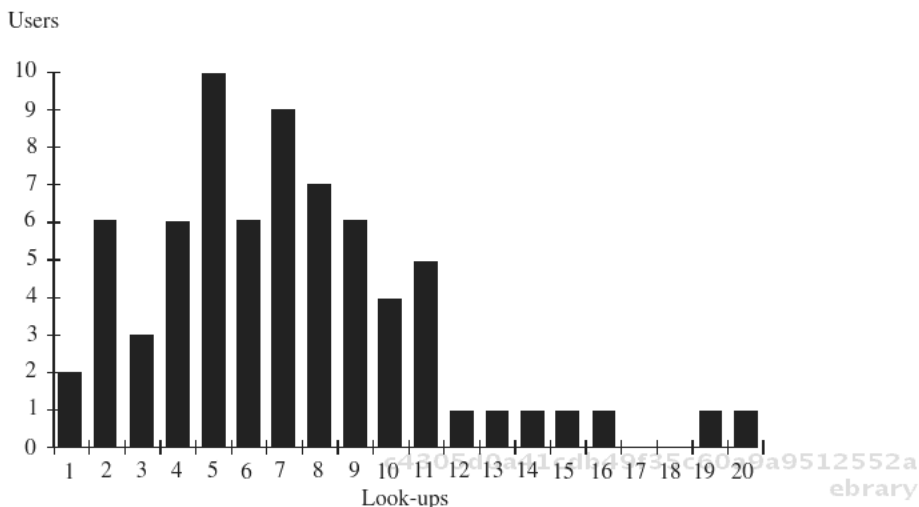


FIG. 6 Distribution of look-ups performed by the 71 Oxford participants

median number of look-ups (seven), if performed over half an hour, does seem intuitively probable. We include this discussion in order to alert other researchers who might adopt our methodology to the need for control over the amount of time which each participant spends on the two roles (dictionary user *v* recorder).

In the Tampere group, this problem did not arise. The students spent approximately 45 minutes on the exercise, acting all the time as dictionary users, and another group acted as recorders.

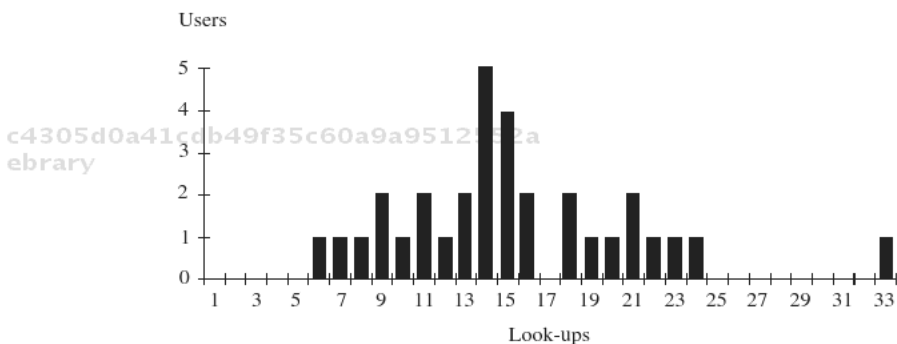


FIG. 7 Distribution of look-ups performed by the 32 Tampere participants

The chart in Figure 7 shows a much more even distribution of look-ups per user in the 32 members of the Tampere group, where the median of 14.5 look-ups in 45 minutes is the equivalent of 9.7 look-ups in half an hour. This compares favourably with the Oxford median of seven per half-hour, but it must be remembered that some time was lost in Oxford because of the change of roles, and that the dictionary users did not have as long as the homogeneous group of Tampere users to get used to the task. Of course, this says nothing about whether they were doing so efficiently, and evaluating the results accurately.

TABLE 3 Variation in types of information sought according to type of translation task

Type of information sought	Number of look-ups for L1–L2 translation		Number of look-ups for L2–L1 translation	
Q.4 = 'A' Seeking an L2 translation	396	43%	53	59%
Q.4 = 'B' Checking word as L2 translation	309	34%	29	32%
Q.4 = 'C' Seeking grammar of L2 word	34	4%	4	4%
Q.4 = 'D' Seeking collocations of L2 word	102	11%	4	4%
Q.4 = 'E' Other types of information	44	5%	—	—
Unspecified	25	3%	—	—
Total	910	~ 100%	90	~ 100%

4 DATABASE QUERY: WHAT KIND OF INFORMATION ARE USERS LOOKING FOR?

Lexicographers (if they are to write more helpful entries) and language teachers (if they are to improve their students' dictionary skills) need not only to know the kind of information that dictionary users are looking for, but to have some idea of what users most frequently need to find out from their dictionaries. Question 4 on the Recording Sheet (L1–L2) attempted to gather such information, giving users a choice between five different types of information:

- A: L2 translation of L1 term (or vice versa)
- B: confirmation of a known L2 term as the good translation
- C: grammatical information about the L2 term
- D: information about collocational behaviour of the L2 term
- E: other information

4.1 Translation task: L1–L2 versus L2–L1

People attempting to translate into their own language rarely if ever consult a dictionary about the grammatical and collocational behaviour of an L2 word. Any meaningful query to the database about types of information must take into account the differences between L1–L2 and L2–L1 translation. When the type of translation task is taken into account, the statistics are as shown in Table 3.

Predictably, the commonest L1–L2 look-up was to find a foreign language translation unknown to the user; the next commonest had as its aim to check that an L2 word thought to be a good translation was actually acceptable. We were, however, surprised to note that, roughly, only one in ten look-ups was in search of collocational information (e.g. was the L2 adjective they had in mind really used to modify the L2 noun that their L1 context required, and so on), and fewer than one in 20 look-ups had grammatical information as its goal. See Section 7 for information about how satisfied these people were with what they found.

As was to be expected, people translating into their own language (L2–L1 Recording Sheet) had limited needs from their dictionary: either they did not know the L2 word and had to find the L1 equivalent (Q.4: A), or they thought they knew it and had to check (Q.4: B).

It is comparatively easy, if there are no insuperable space constraints, for a lexicographer to make sure that the grammatical information in a dictionary entry is fairly comprehensive. It is much less easy, and requires much more space, to make the collocation information

even remotely adequate. The fact that many more users are seeking the latter type of information than the former is a challenge to lexicographers and language teachers alike. The need for collocational information in dictionaries for L2 speakers is mentioned again in Section 8.3.

4.2 Level of users' L2 skills

It would be reasonable to think that the type of information looked up in the dictionary might vary to some extent according to the users' knowledge of the foreign language in question. Focusing more specifically on the L2 language skills of the seekers gives the results shown in Table 4, where the total number of look-ups is 983 and not 1,000, because 17 look-ups were performed by users who did not specify their L2 skills.

TABLE 4 Variation in types of information sought according to users' L2 skills

Type of information sought	Look-ups by those with advanced L2 skills		Look-ups by those with intermediate L2 skills		Look-ups by those with beginner L2 skills	
Q.4 = 'A' Seeking an L2 translation	299	41%	87	45%	49	79%
Q.4 = 'B' Checking word as L2 translation	273	37%	56	29%	8	13%
Q.4 = 'C' Seeking grammar of L2 word	23	3%	11	6%	4	6%
Q.4 = 'D' Seeking collocations of L2 word	76	10%	29	15%	1	1%
Q.4 = 'E' Other types of information	36	5%	8	4%	—	—
Unspecified	22	3%	1	—	—	—
Total	729	~ 100%	192	~ 100%	62	~ 100%

The figures in the first row of Table 4 (Advanced 41% versus Intermediate 45% versus Beginners 79%) seem to support the intuition that those with least L2 knowledge will make most use of the direct-translation facility which the dictionary offers. It should however be pointed out in this regard that most of the Beginners chose to do a translation into their own language rather than into a foreign language, and that fact must also be reflected in these figures.

4.3 Position of look-up in search process

Finally, one might speculate that the first look-up in a search might be a quest for an L2 translation (we shall call this **primary information**), and that once the L2 word had been found this would change to a quest for confirmation of the chosen translation, grammatical or collocational facts about it, etc. (we shall call this **secondary information**). As explained in Section 3.4, it is not possible to determine from the current database whether this did in fact happen.

However, a comparison of the number of first, second, and subsequent look-ups against this broad division of information types sought (primary versus secondary information) gives the statistics in Table 5, where only these two broad types of information have been considered: those answering "A" to Question 4 were seeking for primary information, and those answering "B", "C", "D", or "E" were seeking for secondary information.

TABLE 5 Comparison of broad types of information sought according to the position of look-up in search process

Type of information sought	Look-up 1		Look-up 2		Look-up 3		Look-up 4		Look-ups 5–8	
Primary	295	51%	97	40%	28	29%	19	39%	10	26%
Secondary	271	47%	137	57%	63	64%	30	61%	25	64%
Unspecified	8	2%	6	2%	7	7%	—	—	4	10%
Total	574	100%	240	~ 100%	98	100%	49	100%	39	100%

As might be expected, the secondary information takes on increasing prominence as the search continues (47% of first look-ups, 57% of second look-ups, and 64% of third look-ups).

5 DATABASE QUERY: WHERE DO USERS FIND THE INFORMATION THEY NEED?

Lexicographers in particular are keen to know in which part of the entry the user is most likely to find the information sought. To a certain extent, naturally, this depends on the kind of information needed, but often a lexicographer has a choice of how to include a specific piece of information: for instance, a fact destined to help the user identify the sense of the headword being treated in a particular section of the entry could be encoded as a metalinguistic note, or an example of usage, or a semantic domain label, and so on.

TABLE 6 Location of answers to successful look-ups for different translation tasks

Location of answers	Successful look-ups for L1–L2 translation		Successful look-ups for L2–L1 translation	
headword translation	232	44%	27	42%
example (+ translation)	65	12%	5	8%
definition	46	9%	12	19%
idiom (+ translation)	29	5%	8	12%
compound (+ translation)	17	3%	1	2%
other	5	1%	1	2%
unspecified	134	25%	10	16%
Total	528	~ 100%	64	~ 100%

Information about the helpfulness of the various dictionary entry components was requested in Question 6 of the Recording Sheets, which asked users who had found what they needed (i.e. those who had replied either “Yes” or “Yes, but ...” to Question 5) to identify the section of the entry which had provided the facts. Many people who answered “Yes, but ...” to Question 5 had not given any information for Question 6; for 144 such look-ups (24% of the total of 592 (528 + 64) successful look-ups: see Table 6 below), Question 6 was left blank.

In designing the questionnaire, “headword translation” was intended to refer only to that section in bilingual dictionaries, and “definition” only to the definitions in monolingual dictionaries. However, some users clearly interpreted “definition” as referring to the headword translation (since as Table 7 shows, it is recorded as having been of use to bilingual dictionary users), and indeed in some languages these are alternative terms to denote the translation material. This ambiguity was unfortunately not foreseen in the wording of the questions, but should be borne in mind by others using our methodology. The brackets round “+ translation” in this section reflect the fact that in monolingual dictionaries no translations are included.

The type of query discussed here in Section 5 is, we believe, a good illustration of the power of this database. Sections 5.1 to 5.3 illustrate how it is possible to place different conditions on the query, as various parameters are reviewed.

5.1 Dictionary component and type of translation task

We look first at the overall figures, distinguishing dictionary components and translation tasks.

As Table 6 shows, in 44% of all successful L1–L2 look-ups and in 42% of successful L2–L1 look-ups the user found the information in the translation of the headword. If “definition” is construed as “translation”, this proportion increases. The figures given are, however, rather crude, and ignore a number of variables, such as the type of dictionary used, or of information sought: all important aspects of dictionary consultation which have to be taken into account.

TABLE 7 Location of answers to successful look-ups using bilingual dictionaries for different translation tasks

Location of answers in bilingual dictionaries	In successful look-ups for L1–L2 translation		In successful look-ups for L2–L1 translation	
headword translation	220	53%	27	64%
example (+ translation)	48	11%	1	2%
definition	10	2%	1	2%
idiom (+ translation)	26	8%	6	14%
compound (+ translation)	16	4%	—	—
other	4	1%	—	—
unspecified	92	22%	7	17%
Total	416	~ 100%	42	~ 100%

The great majority of the participants used bilingual rather than monolingual dictionaries (this is shown in Table 21 below). Therefore we decided to look specifically at successful look-ups with a bilingual dictionary, distinguishing between the two types of translation task; as Table 7 shows, here the role of the headword translation predictably increases and that of definition is reduced. Other changes appear insignificant.

TABLE 8 Distribution of look-ups according to narrowing conditions

Translation tasks	Total number of look-ups	Successful look-ups in all dictionaries	Successful look-ups in bilinguals only
L1–L2	910	528	416
L2–L1	90	64	42
Total	1,000	592	458

5.2 Type of dictionary used

Table 8 shows the varying number of look-ups according to narrowing conditions, namely first the overall figures, then figures of successful look-ups (*i.e.* where users responded “yes” or “yes, but . . .” to Question 5: see Section 6), and in the last column the figures of successful look-ups in bilingual dictionaries.

Our figures show (see Table 9) that overall the bilingual dictionary (with a 64% success rate) proved more useful than the monolingual (successful in only 48% of look-ups).

It may be relevant to remember, in connection with Table 9, that an L2 monolingual look-up would often follow a series of unsuccessful bilingual look-ups.

TABLE 9 Success rate of bilingual versus L2 monolingual dictionaries

Type of dictionary consulted	Look-ups in bilingual dictionaries		Look-ups in monolingual dictionaries		Look-ups where dictionary unspecified	
Successful	458	64%	134	48%	—	—
Unsuccessful	253	35%	147	52%	—	—
Unspecified	3	—	—	—	5	100%
Total	714	~ 100%	281	100%	5	100%

5.3 Type of information sought

Another factor which could affect the place where information might be found in the dictionary entry is the type of information (primary or secondary) being sought. Table 10 shows the results of this query.

It will have been noted from the figures in Table 8 that the total number of successful look-ups was 592; in Table 10 the total is however 583 (256 + 327), because 9 of the look-ups were performed by users who did not specify the type of information they were looking for. Table 10 seems to indicate that a user looking for secondary information about a specific word needs to spread the net wider in the dictionary entry than a user seeking a simple translation.

6 DATABASE QUERY: DO USERS FIND WHAT THEY LOOK UP?

One of the main things which both lexicographers and teachers need to know (and which lexicographers at least rarely get the chance of finding out) is what kind of success rate users have in their dictionary searches. Question 5 on the Recording Sheet asked users to say whether their look-up had been successful; they were given the choice of saying that they

TABLE 10 Location of answers to successful look-ups according to types of information sought

Answer to query was found in ...	In successful look-ups for primary information		In successful look-ups for secondary information	
headword translation	123	48%	133	41%
example (+ translation)	22	9%	46	14%
definition	16	6%	40	12%
idiom (+ translation)	24	9%	13	4%
compound (+ translation)	11	4%	7	2%
other	—	—	6	2%
unspecified	60	23%	82	25%
Total	256	~ 100%	327	~ 100%

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had found what they were looking for (shown as answer “Yes” in Table 11), that they had found something useful but not exactly what they need (answer “Yes, but ...”), or that the look-up had failed (answer “No”).

It should be remembered that the figures here do not tell us whether user expectations of dictionary contents were reasonable, whether their search techniques were adequate, or whether what they found was a correct solution to their translation problem. Only close study of the individual search patterns will give that information, and such a detailed investigation is not part of our present brief. The material discussed in Sections 6.1–6.3, and illustrated in Tables 11–13 inclusive, all relates essentially to the 1,000 look-ups being analysed, although the totals in these tables, for reasons given in the text, do not always add up to 1,000.

6.1 Overall

The responses to Question 5 over the 1,000 look-ups performed by the 103 participants are summarized in Table 11, showing that only slightly over one third were wholly satisfactory.

TABLE 11 Success ratings of dictionary look-ups

Answer to Q.5 Did they find it?	Out of 1,000 look-ups	
Yes	373	37%
Yes, but ...	219	22%
No	400	40%
No response	8	1%
Total	1,000	100%

Why, in 40% of the cases, did the user believe that the look-up had failed? In order to answer that question one would need to be able to generalize from the searches recorded, in an attempt to discern recurring patterns. As explained in Section 3.4, this is unfortunately not possible.

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6.2 Translation task: L1–L2 versus L2–L1

It is arguable that the direction of the translation, into or out of one's native language, would have an effect on the success of the look-up. Out of the 1,000 individual look-ups in the database, 910 (91%) related to a translation task into a foreign language, and only 90 (9%) to a translation from the foreign language into one's mother tongue. The imbalance means that comparison of the two sets cannot do more than indicate a possible trend, which may be worth following up later; the comparative figures are given in Table 12.

TABLE 12 Success ratings of dictionary look-ups according to type of translation task

Answer to Q.5: Did they find it?	In look-ups for L1–L2 translation		In look-ups for L2–L1 translation	
Yes	323	35%	50	55%
Yes, but ...	205	22%	14	15%
No	374	41%	26	29%
No response	8	1%	—	—
Total	910	~ 100%	90	~ 100%

Predictably, it proved easier to translate into one's own language rather than the other way around. 55% of the look-ups for L2–L1 translation were accounted wholly successful, compared with 35% of L1–L2 look-ups. Presumably, people performing the latter task needed, and were hoping for, more information than their dictionary provided. Similarly, only 29% of the L2–L1 translators believed that their dictionary had totally failed them, as opposed to 41% of the L1–L2 translators. As noted above, however, the numbers of L2–L1 tasks are comparatively small, and further research is needed in order to discover whether the figures in Table 12 provide a true picture of what happens during the dictionary consultation process.

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ebrary 6.3 Level of Users' L2 skills

It could be that the level of the user's L2 skills would have an effect on the success of the look-up. 729 out of the 1,000 look-ups were carried out by the 66 advanced speakers of L2, 192 by the 23 intermediate speakers, and 62 by the 11 beginners. Three people (accounting for 17 look-ups) did not specify their L2 skills. The figures in Table 13 therefore relate to the

TABLE 13 Success ratings of dictionary look-ups according to level of users' L2 skills

Answer to Q.5: Did they find it?	In look-ups by those with advanced L2 skills		In look-ups by those with intermediate L2 skills		In look-ups by those with beginner L2 skills	
Yes	237	32%	94	49%	29	47%
Yes, but ...	180	25%	28	15%	11	18%
No	306	42%	68	35%	22	35%
No response	6	1%	2	1%	—	—
Total	729	100%	192	100%	62	100%

983 look-ups (729 + 192 + 62) for which the users' L2 skills are known, rather than the full total of 1,000 look-ups.

The differences between those answering "Yes" and those answering "Yes, but..." are interesting here. Those with advanced L2 skills are clearly more reluctant to say that they have definitely found what they are looking for (32% as against 49% of the intermediate group). This could be because the information the advanced users wanted was more complex and elusive, or because experience has taught them to mistrust their dictionaries, or because they are more aware than the others of the niceties of collocational fit, or of the other pitfalls lying in wait for those writing in a foreign language.

6.4 Type of information sought for L1–L2 translation only

The type of information being sought might reasonably be expected to have a bearing on the success rate of the search. In looking at this aspect of dictionary use, we decided to isolate the L1–L2 translation task, for which more sophisticated dictionary skills are needed than those required for L2–L1 translation. The figures in Sections 6.4.1–2 therefore relate to the 910 look-ups (see Table 12) carried out during the process of translating out of one's mother tongue into a foreign language.

6.4.1 Two types of information: primary versus secondary

396 of the total of 910 L1–L2 look-ups involved primary information and 489 involved secondary (see Section 4.3 above for what these terms mean): in 25 cases not enough detail was given to identify the type of information sought. Looking first at the success rate of look-ups in the broad context of either primary or secondary information, we obtain the figures in Table 14, where the total number of look-ups is 885 (396 + 489), which together with the 25 mentioned above represents the 910 L1–L2 look-ups.

TABLE 14 Success ratings of dictionary look-ups according to broad types of information sought

Answer to Q.5: Did they find it?	In look-ups for primary information		In look-ups for secondary information	
Yes	124	31%	191	39%
Yes, but ...	92	23%	112	23%
No	179	45%	181	37%
Unspecified	1	—	5	1%
Total	396	~ 100%	489	100%

The figures in Table 14 suggest that the broad type of information sought does in fact make some difference to the success of the look-up. People who go to the dictionary looking for information about a word they already have in mind are more likely to succeed than those with no clear idea of the translation they need. Only 37% of the former, the secondary information look-ups, failed; of primary information look-ups, the failure rate was 45%.

6.4.2 Four different types of information

The database allows a more detailed query relating to the types of information being sought during L1–L2 translation and recorded in Question 4 on the Recording Sheets. When such

TABLE 15 Success ratings of dictionary look-ups according to specific types of information sought

Answer to Q5: Did they find it?	(Q.4 = "A") Seeking an L2 translation		(Q.4 = "B") Checking word as L2 translation		(Q.4 = "C") Seeking grammar of L2 word		(Q.4 = "D") Seeking collocations of L2 word		(Q.4 = "E") Seeking other information	
Yes	124	31%	127	41%	16	47%	39	38%	9	20%
Yes, but ...	92	23%	78	25%	6	18%	22	22%	6	14%
No	179	45%	102	33%	12	35%	39	38%	28	64%
Unspecified	1	—	2	1%	—	—	2	2%	1	2%
Total	396	100%	309	100%	34	100%	102	100%	44	100%

a query is made, the results are as shown in Table 15, which again omits the 25 unspecified look-ups, giving a total of 885 (396 + 309 + 34 + 102 + 44) instead of the expected 910.

At first glance the figures in Table 15 do not look very interesting: it obviously proved somewhat more difficult (as is also seen in Table 14) to find the L2 translation of an L1 word (primary information) than to confirm a hunch about an L2 term, or to find information about its grammar or its collocability (secondary information). However, as there was a considerable difference in the number of look-ups targeting the various types of information, the 38% failure in attempts to find collocational information represents much more user frustration than the 35% failure to find grammatical information. The former percentage reflects 39 look-ups, while the latter reflects only 12.

We also looked to see whether there is a difference in the *failure* rating between people who were looking for primary information and those who were looking for secondary information, taking into account their different L2 skills, but no clear pattern emerged.

7 DATABASE QUERY: ARE PEOPLE SATISFIED WITH WHAT THEY GET? eb358

Information about the satisfaction rate of the user is based on answers to Question 9 in the Recording Sheets, which asked users to say whether they were satisfied or not with the results they had obtained in that particular search. Question 9 was completed at the end of each search (not each look-up) and so relates to a single problem which a user was trying to solve. There were 574 searches in all, out of which 537 were completed. The material in this section (Tables 16–20 inclusive) relates to these 537 searches, showing different aspects of the same data.

7.1 Overall figures

Looking at the satisfaction rating across all participants in this experiment gives the results shown in Table 16.

TABLE 16 Overall satisfaction rate at end of search

Dictionary users' evaluation of results	Out of 537 searches	
Satisfied	319	59%
Doubtful	131	24%
Not satisfied	71	13%
No response	16	3%
Total	537	~ 100%

The fact that in 59% of the cases the dictionary users pronounced themselves satisfied with the results of their search is encouraging.

7.2 Translation task

Did the direction of the translation task make a difference to the satisfaction rate?

Of the 537 completed searches, 473 related to L1–L2 translation tasks and 64 to L2–L1 tasks. The database offers the figures shown in Table 17, resulting from a correlation of

TABLE 17 Satisfaction rate for different translation tasks

Dictionary users' evaluation of results	In searches for L1–L2 translation		In searches for L2–L1 translation	
Satisfied	273	58%	46	72%
Doubtful	117	25%	14	22%
Not satisfied	67	14%	4	6%
No response	16	3%	—	—
Total	473	100%	64	100%

Question 9 on the Recording Sheet (user satisfaction rating) and Question 3 on the Cover Sheet (type of translation task being performed).

It is clear from the figures in Table 17 that people translating into their own language were more satisfied with the performance of their dictionaries than people translating into a foreign language. This is understandable. Much more information is needed, of course, for the latter task.

7.3 Level of users' L2 skills

The question also arises whether the users' level of L2 skills makes a difference to the way in which they view the performance of their dictionary. One might hypothesize that the more the users know about the foreign language, the less easy they are to please. We saw in Section 6.3 that on the basis of look-ups (as opposed to searches, on which satisfaction ratings were requested), the advanced L2 speakers were more reluctant than others to say that they had definitely found what they were looking for.

In response to Question 2 on the Cover Sheet, 66 of the participants rated themselves as having advanced L2 knowledge, 23 as having intermediate skills, and 11 described themselves as beginners. Three users did not specify their L2 level.

An analysis of the satisfaction rating (Question 9 on Recording Sheet) taking into account the users' L2 skills gives the results shown in Table 18.

The "Not satisfied" figures show little variation ascribable to the users' different levels of L2 skills. Where these do seem to make a difference is in the users' assessment of whether they got all of what they had hoped for, and whether they believed it to be correct. 29% of the advanced L2 speakers expressed reservations about that, as compared with 14% of the intermediate speakers and 22.5% of the beginners. The "Satisfied" figures also show some difference. Although the "Beginners" numbers are small, this exercise illustrates the potential of a database of this type.

7.4 Type of information sought

In Section 4.3 we made a broad distinction between primary information and secondary information: participants answering "A" to Question 4 in the Recording Sheet were considered to be seeking primary information, while those answering "B", "C", "D", or "E" were seeking secondary information. These distinctions form the basis for the figures in Table 19, which shows the comparative satisfaction rates for the last look-ups of each type of search.

TABLE 18 Satisfaction rate against level of L2 skills

Dictionary users' evaluation of results	In searches by those with advanced L2 skills		In searches by those with intermediate L2 skills		In searches by those with beginner L2 skills		In searches by those with unspecified L2 skills	
Satisfied	201	56%	80	65%	26	65%	12	92%
Doubtful	104	29%	17	14%	9	22.5%	1	8%
Not satisfied	51	14%	16	13%	4	10%	—	—
No response	5	1%	10	8%	1	2.5%	—	—
Total	361	100%	123	100%	40	100%	13	100%

TABLE 19 Satisfaction rates according to broad types of information sought

Dictionary users' evaluation of results	Primary information		Secondary information		Unspecified information	
Satisfied	131	61%	182	59%	6	50%
Doubtful	46	21%	81	26%	4	33%
Not satisfied	33	15%	36	11%	2	16%
No response	5	2%	11	3%	—	—
Total	215	~ 100%	310	~ 100%	12	~ 100%

These figures which distinguish among the various types of information show little difference in the satisfaction rate of the respective groups.

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7.5 Translators versus others

Finally, the satisfaction levels of trainee translators (as represented by the 32 members of the homogeneous group from Tampere) was compared with that of the 54 in the Oxford group who were performing the same L1–L2 translation task, and the results are shown in Table 20. Some of these may very well have been qualified translators, of course, but there was a high proportion of professional lexicographers and practising academics in the group. Tampere had 230 completed searches, as against Oxford's 243: roughly comparable figures.

More trained translators expressed doubt over the success of their search. Their training undoubtedly leads them to be wary of possible translation traps: they were fully satisfied only if they got multiple confirmation from various sources that their choice was a correct or adequate one for the particular context.

TABLE 20 Rates of satisfaction with the result of L1–L2 translation task queries

Dictionary users' evaluation of results	Oxford group		Tampere group	
Satisfied	157	65%	116	50%
Doubtful	39	16%	78	34%
Not satisfied	33	14%	34	15%
No response	14	6%	2	1%
Total	243	~ 100%	230	100%

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8 DATABASE QUERY: WHAT DO PEOPLE DO WHEN FRUSTRATED?

Out of the total 1,000 look-ups, 400 were unsuccessful, that is to say, in these the users did not find what they were looking for (see Section 6.1). Of course, the failure rate of 40% cannot be due only to some inadequacy on the part of the dictionaries involved: inadequate strategies and unrealistic expectations on the part of the user must also contribute to this figure.

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In order to determine what dictionary users do when they do not find an answer to their problem, we decided to make some individual case studies. As explained in Section 3.4 above, it was not possible for us to detect trends automatically by querying the database on this point.

The Tampere group was much more homogeneous than the Oxford group: in the former, all members had relatively similar L2 skills, spoke the same mother tongue (Finnish), were using the same set of dictionaries, and were translating the same text.

This was obviously a good basis for a pair of contrastive case studies.

In this section we look at the way the Finnish translators handled their frustrations with problems of L1–L2 translation.

In recording the work of the Tampere group, a separate field was included in which was noted a unique reference number, identifying each of the 39 expressions in the text which had given rise to a search. The existence of this field tells us how many times each of these expressions caused a problem, and of course helps to identify the most problematic of these items. The case studies below discuss two of the most frequent causes of problems.

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8.1 Case study: Selecting an appropriate translation from among L2 alternatives

The Finnish expression *apuväline* posed a problem of translation into English. Its meaning is rendered in the dictionary that the students used as: *instrument, medium, vehicle, facilities*. In a passage discussing the design of a work station environment, the word occurred in this context: “Oman tietokoneen ääressä tehdään paljon töitä, mutta vasta työntekijöiden niska- ja hartiaseudun vaivat vat herättäneet *apuvälineiden* keksijät” (“A lot of people work at their own PCs, but it was only when computer operators in the workplace complained of neck and shoulder pains that the interest of the accessory designers was aroused”). Here, *apuväline* would cover such items as adjustable chairs, back supports, wrist rests, foot rests, document holders, and so on, which, in an office supplies catalogue, come under the heading of *accessories*. This excellent equivalent of the Finnish term is not under *apuväline* in the Finnish–English dictionary used by all the students. It is therefore all the more interesting to attempt to discover what strategies the students employed in an effort to find a satisfactory translation.

Here is a summary of the searches performed by three different users in an attempt to find an appropriate translation of *apuväline*. As noted above, they all had the same two-volume bilingual dictionary, and there were four monolingual English dictionaries available.

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(1) USER A

Look-up 1

Looked up: *apuväline* in the bilingual dictionary

Found: *instrument, medium, vehicle, facilities*

Look-up 2

Looked up: *facility* in monolingual English dictionary A

Look-up 3

Looked up: *instrument* in monolingual English dictionary A

Look-up 4

Looked up: *aid* in monolingual English dictionary A

Look-up 5

Looked up: *help* in monolingual English dictionary A

Look-up 6

Looked up: *medium* in monolingual English dictionary A

Look-up 7

Looked up: *aid* in monolingual English dictionary B

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Outcome: The user noted the outcome as a failure to find the correct English translation for *apuväline*.

Comment: Initially, the user followed a fairly orthodox path: faced with four alternatives, he checked out what seemed to be the two most likely candidates in a monolingual dictionary, but decided from the definitions and examples there that neither was a suitable translation for *apuväline*.

He then thought up two English words which might have been appropriate, *aid* and *help*, and looked them up in the same monolingual dictionary, without making much progress in his task.

Reverting to the original four alternatives, he selected a third, *medium*, and consulted the same monolingual dictionary, but this led him to believe that the word was not a good choice. As a last resort in what had clearly become a despairing impasse, he returned to one of the words he had thought up for himself, *aid*, and looked it up in a different monolingual dictionary.

He then gave up.

(2) USER B

Look-up 1

Looked up: *apuväline* in the bilingual dictionary

Found: *instrument, medium, vehicle, facilities*

Look-up 2

Looked up: *instrument* in monolingual English dictionary B

Look-up 3

Looked up: *medium* in monolingual English dictionary B

Look-up 4

Looked up: *apuväline* in the bilingual dictionary

Outcome: The user noted that a useful example had been found, and believed that the correct translation had probably been chosen. However, as this was the word *medium*, this was an incorrect assumption.

Comment: Like User A, User B began in an orthodox manner, gleaning four alternatives from the bilingual dictionary and checking two of these, *facility* and *medium*, in a monolingual dictionary. Dissatisfied with the result, and presumably believing she might have missed something in the first look-up, she then returned to the bilingual dictionary and reread the entry for *apuväline*. Her cumulative impression of the search led her to select (wrongly) the English word *medium* as a translation.

(3) USER C

Look-up 1

Looked up: *apuväline* in the bilingual dictionary

Found: *instrument, medium, vehicle, facilities*

Look-up 2

Looked up: *instrument* in monolingual English dictionary B

Look-up 3

Looked up: *medium* in monolingual English dictionary B

Look-up 4

Looked up: *vehicle* in monolingual English dictionary B

Look-up 5

Looked up: *facility* in monolingual English dictionary B

Outcome: The user noted that a useful example had been found, and believed that the correct translation had probably been chosen. However, as this was the word *facility*, this was an incorrect assumption.

Comment: Like the others, User C started with the bilingual dictionary. Unlike her colleagues, however, she carefully checked all the four alternatives in a monolingual dictionary, coming to the (mistaken) conclusion that the English word *facility* was probably the correct choice. Her hesitation however is shown in her assessment of the outcome: to Question 5 in the Recording Sheets (“Did you find what you are looking for?”) she answered “Yes, but . . .”.

Conclusion: We would suggest that the ways in which these three students dealt with the same problem highlight the responsibility of bilingual dictionaries. Had the bilingual dictionary which offered *instrument, medium, vehicle, facilities* as translations for *apuväline* differentiated the English equivalents, some at least of the subsequent dictionary consultation might have proved unnecessary.

The four English words are by no means even partially synonymous, *medium* and *vehicle* being semantically the closest neighbours, but still having very distinct meanings. They are certainly different enough to support some semantic differentiation, which would have helped the Finnish speaker choose among them in the light of the context in which the translation would be used.

Probably the most useful way of giving that type of information is in example sentences. The bilingual dictionary entry held no examples at all. More information differentiating the L2 terms would have helped all three users.

8.2 Case study: Translating a multi-word expression

In this case study, the problem consists of translating into English a multi-word expression in Finnish. This is *niska- ja hartiaseudun vaivat*, and it was found in the context cited and translated in section 8.1: “Oman tietokoneen ääressä tehdään paljon töitä, mutta vasta työntekijöiden *niska- ja hartiaseudun vaivat* vat herättäneet apuvälineiden keksijät”.

The Finnish word *niska* means “neck”; *ja* means “and”; *hartia* means “shoulder”; *seutu* means “region” and is in the genitive case in this compound; and *vaivat* is a plural form of a word variously rendered in English by *aches, pains, or troubles*.

The problem for the Finnish students, who undoubtedly could translate all of the individual component words into English, was to determine the combinatory potential of the English terms; in particular they needed to know:

- whether *niska- ja hartiaseudun* should be translated as *neck and shoulder* or *neck and shoulder region* within the English multi-word expression; and
- what in the context of *neck and shoulder* would be the most appropriate English translation of *vaivat*.

Two different approaches to finding the information are described below.

(1) USER A

Look-up 1

Looked up: *niska* in the bilingual dictionary

Found: *neck*

Look-up 2

Looked up: *hartia* in the bilingual dictionary

Found: *shoulder*

Look-up 3

Looked up: *vaiva* in the bilingual dictionary

Found: *trouble, complaint, ailment, affliction* and, in phrasal examples, expressions such as *stomach pains* and *back pains*

Outcome: The user abandoned the search, apparently no further advanced in the search for the translation of *niska- ja hartiaseudun vaivat*.

Comment: As regards the first two look-ups, the user undoubtedly knew the English for *niska* and *hartia*. One is forced to the conclusion that she was looking for a translation of the whole phrase, or at least for *niskaseudun vaivat* (*neck pains*) or *hartiaseudun vaivat* (*shoulder pains*). When neither of these was forthcoming, she turned to the entry for *vaiva*, presumably in search of the same information.

(2) USER B**Look-up 1**

Looked up: *neck* in the bilingual dictionary c4305d0a41cdb49f35c60a9a9512552a

Found: *kaula, niska* (*kaula* refers to the whole, or the front, of the neck, whereas *niskary* designates the nape of the neck)

Look-up 2

Looked up: *neck* in monolingual dictionary C

Look-up 3

Looked up: *niska* in the bilingual dictionary

Found: *neck*

Look-up 4

Looked up: *hartia* in the bilingual dictionary

Found: *shoulder*

Look-up 5

Looked up: *seutu* in the bilingual dictionary

Found: *region*, and, in phrasal examples, expressions such as *abdominal region* and *heart region*

Look-up 6

Looked up: *region* in monolingual dictionary B

Outcome: User B described himself as satisfied that he had found the correct way to translate the Finnish expression *niska- ja hartiaseudun vaivat*. (Whether he had in fact done so is not known.)

Comment: This user looked up the components of the Finnish expression in linear order. The search is typical of many such searches, both with regard to this expression and to many others in the text.

8.3 Discussion

It is interesting to note that the kind of expressions which caused most of the problems were not “hard words” (difficult or rare terms which the students might be forgiven for never having encountered before), but (i) (see 8.1) very general words whose translation is highly context-dependent, or (ii) (see 8.2) combinations of extremely basic terms which all the students knew. In their comments on their experiences, the Tampere students frequently expressed their desire for more comprehensive coverage in the examples section of the entries, and in particular for more information about collocation in English.

We have suggested in our comments on the cases in 8.1 that the bilingual dictionary could do more to help students with this type of problem. However, there is a physical limit to the amount of information which a bilingual dictionary can contain. The possible contexts of *apuväline* are so varied that it would be virtually impossible to include them all in a dictionary. Similarly, the possible combinations of *vaiva* with names of parts of the body are too numerous to include them all.

Atkins (1991a: 53 ff) discussed the insuperable problems for a bilingual lexicographer raised by words like *apuväline*; words having a very general meaning which it is easy, depending on the context in which it occurs, for a reader to interpret in a number of different specific ways: the example chosen by Atkins was *facility*. This semantic generality coupled with possible contextual specificity means that these words normally have many different equivalents in another language.

Varantola (1994) suggested that a monolingual corpus, rather than a bilingual or monolingual dictionary, was the right place to start in the search for appropriate translations for highly context-dependent equivalents, or for information about the combinatory properties of basic terms. A dictionary is not enough, for an advanced student of a foreign language. But a dictionary is essential as a starting point in many of such a student's searches. The combination of a comprehensive bilingual dictionary (together with other reference works, including specialist dictionaries as appropriate) and a selected monolingual L2 corpus in which the examples are broadly differentiated according to word senses would offer advanced language practitioners a powerful translating tool. Many would also appreciate a similarly selected and differentiated L1 monolingual corpus, for often a translator needs a certain amount of reassurance about his or her own language.

9 DATABASE QUERY: WHEN DO PEOPLE USE AN L2 MONOLINGUAL DICTIONARY?

TABLE 21 Choice of bilingual or L2 monolingual dictionary

Dictionary type consulted	Out of 1000 look-ups	
Bilingual	714	71%
L2 monolingual	281	28%
Unspecified	5	—
Total	1,000	~ 100%

One of the interesting aspects of the use of dictionaries for translation purposes is the amount of weight which the user gives to a bilingual dictionary compared with a monolingual dictionary. The large multilingual research project into the use of dictionaries for L2 purposes described in Atkins and Knowles (1990) found a distinct preference for bilingual over L2 monolingual dictionaries: 57.9% of the 740 participants claimed to use a bilingual dictionary nearly every week, while only 30.8% made the same claim for an L2 monolingual dictionary; only 0.4% said that they never used a bilingual dictionary, as compared with 27% who never used an L2 monolingual dictionary. It was clear that, overall, the bilingual dictionary was the preferred reference work for most tasks with most people. Our database also shows this trend: see Table 21.

9.1 For different translation tasks?

In this context, however, it is interesting to ask how the different tasks (translating from L1 to L2, and from L2 to L1) affect the figures. There were 1,000 look-ups in all, and Table 22 shows how these were distributed between bilingual and L2 monolingual dictionaries.

As Table 22 shows, 27% of the total L1–L2 translation tasks were performed with the aid of an L2 monolingual dictionary, whereas in the case of L2–L1 translations, an L2 monolingual dictionary was chosen for 37% of the total. This confirms one's intuitions that an L2 monolingual dictionary would offer more help to people trying to understand the foreign language than to those trying to express a concept in it.

TABLE 22 Dictionary choices for different translation tasks

Dictionary type consulted	In look-ups for L1–L2 translation		In look-ups for L2–L1 translation	
Bilingual	657	72%	57	63%
L2 monolingual	248	27%	33	37%
Unspecified	5	—	—	—
Total	910	~ 100%	90	100%

9.2 For different types of searches?

The type of information needed might also affect a user's choice between a bilingual and an L2 monolingual dictionary. It was possible to focus on a uniform group of people (all with advanced level of L2) performing the same task (L1–L2 translation). By comparing their replies to Question 4 on the Recording Sheet ("Why do you need the dictionary?") it is possible to see whether the type of search reflects a difference in the kind of dictionary chosen.

693 of the total of 910 look-ups for an L1–L2 translation were performed by Advanced users, and in 22 of these cases the users did not specify the type of information being sought, leaving 671 look-ups to be included in this calculation. The base figures (290 + 253 + 20 + 72 + 36) in Table 23 total 671. This table highlights rather nicely the fact that when looking for primary information (an unknown translation) people tend to go to the bilingual dictionary, whereas the monolingual dictionary comes into play as their need for secondary information grows.

The figure of 19% for people who looked in L2 monolingual dictionaries for an L2 translation without having a specific L2 expression in mind requires perhaps some elucidation: such look-ups tended to occur after a bilingual dictionary had produced several candidate L2 translations, and the user was turning to an L2 monolingual dictionary in order to choose from amongst them.

9.3 Because of different linguistic skills?

Atkins and Knowles (1990) pointed out that the individual's competence in L2 must influence the choice: the more advanced the user's knowledge, the more likely the choice of an L2 monolingual dictionary. Our database provided the statistics shown in Table 24 for 983 look-ups: cf. 6.3.

TABLE 23 Dictionary choices for L1–L2 translation task by users with advanced L2 skills

Dictionary type consulted	(Q.4 = “A”)		(Q.4 = “B”)		(Q.4 = “C”)		(Q.4 = “D”)		(Q.4 = “E”)	
	Seeking an L2 translation		Checking word as L2 translation		Seeking grammar of L2 word		Seeking collocations of L2 word		Seeking other information	
Bilingual	235	81%	167	66%	8	40%	23	32%	19	53%
L2 monolingual	54	19%	85	34%	12	60%	48	67%	17	47%
Unspecified	1	—	1	—	—	—	1	1%	—	—
Total	290	100%	253	100%	20	100%	72	100%	36	100%

TABLE 24 Distribution of bilingual vs. L2 monolingual use taking account of users' L2 skills

Dictionary type consulted	In look-ups by those with advanced L2 skills		In look-ups by those with intermediate L2 skills		In look-ups by those with beginner L2 skills	
Bilingual	474	65%	169	88%	54	87%
L2 monolingual	250	34%	23	12%	8	13%
Unspecified	5	1%	—	—	—	—
Total	729	100%	192	100%	62	100%

The figures in Table 24 do seem to support the claim that monolingual dictionaries were used more often by users with advanced L2 skills.

It seemed sensible to combine the parameters studied in Sections 9.2 and 9.3 and look at figures for the use of (say) L2 monolingual dictionaries, taking into account both the kind of information sought and the level of users' L2 knowledge. However, the figures for L2 monolingual dictionary use by Intermediate users and Beginners (12% of 192, or 23 for Intermediate, 13% of 62, or 8 for Beginners, see Table 24) are so small that this would not be a worthwhile operation with the current database.

9.4 Because of what has gone before in the search?

More interesting perhaps are the contrastive figures for the various percentages of look-ups in a bilingual dictionary, depending on where the look-up came in the search process; these are given in Tables 25 and 26 (cf. Table 9).

TABLE 25 Selection of bilingual or monolingual dictionary during a single look-up by the Oxford group

Position in search	Oxford group Bilingual		Oxford group Monolingual		Total	
	Count	Percentage	Count	Percentage	Count	Percentage
Look-up 1	291	88%	38	11%	329	~ 100%
Look-up 2	80	71%	32	29%	112	100%
Look-up 3	26	65%	14	35%	40	100%
Look-up 4	10	59%	7	41%	17	100%
Look-ups 5–8	6	54%	5	45%	11	~ 100%
Total	413		96		509	

In Tables 25 and 26, we see a common trend in the two groups, but also a distinct divergence between them. The common trend is that as the search progresses, less use is made of the bilingual and more of the monolingual dictionary. In Oxford (Table 25), the bilingual figures drop from 88% through 71%, 65%, and 59% to 54%; in Tampere (Table 26) they drop from 86% through 47% and 24%, with a hiccup at 41%, to 21%. The two columns of monolingual figures rise correspondingly. The divergence lies in the fact that, while the mixed-level Oxford group remains faithful to the bilingual dictionary (88% of first look-ups and 71% of second look-ups), the advanced Tampere users quickly move on to monolinguals (86% bilingual in first look-up, only 47% in second look-up). One has the intuition that the surprising reversion

to the bilingual dictionary in 41% of the 4th look-ups in Tampere was caused by users believing they must have missed something in an earlier bilingual consultation, and going back to recheck.

TABLE 26 Selection of bilingual or monolingual dictionary during a single look-up by the Tampere group

Position in search	Tampere group Bilingual	Tampere group Monolingual	Total
Look-up 1	208 86%	33 14%	241 100%
Look-up 2	60 47%	67 53%	127 100%
Look-up 3	14 24%	44 76%	58 100%
Look-up 4	13 41%	19 59%	32 100%
Look-ups 5–8	6 21%	22 79%	28 100%
Total	301	185	486

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Tantalizing questions of detail arise. Why does a user move from bilingual to monolingual dictionary in the middle of a search? Why does the same user start one search with a bilingual dictionary and the next search with a monolingual? The database contains enough detailed information to allow these questions to be answered, but to do so would require much time-consuming cross-checking against the actual dictionaries used for each look-up.

10 CONCLUSION

In this paper we have given an account of an experiment into the recording of dictionary use for translation purposes, explaining how it was carried out, and pointing out the strengths and weaknesses of the resultant database as a source of information about the process.

The weaknesses have been touched on at the appropriate point in the discussion of the queries, notably in Sections 2.1 (on the optimal amount of information requested in the Cover Sheet), 2.2 (on the content of Questions 4, 6, 7 in the Recording Sheet), 3.2 (on how such an experiment could really reflect 'natural' dictionary usage), 3.4 and 6.1 (the last two on infelicities in the database design). The queries which could not be made to the database in its present state include the following:

- did searches tend to start with a quest for a translation and go on to a quest for peripheral information?
- was the use of an L2 monolingual dictionary a last resort, or were monolinguals a regular step in search strategies?

When applied to linguistically-motivated searches of this nature, statistics have rarely any value other than that of indicating possible trends in the behaviour of the groups involved. We believe, however, that the strengths of this study are demonstrated by the extent and detail of the answers which may be derived from the database, as exemplified in Sections 3–9 above. The database is powerful and flexible: other researchers may wish to use it as a launchpad for their own studies, since it is easy to add or remove fields without invalidating the data, if this is done carefully.

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A comprehensive and representative survey would undoubtedly provide a highly informative resource for lexicographers, both those working on bilingual dictionaries and those whose work is in their own language alone. Moreover, such a database would be of equal service to language teachers and teachers of translation. We have found that it has told us a great deal about how dictionaries are used for assistance with translation problems. One fact that has impressed us is the amount of reassurance sought from their dictionaries, particularly about L2 collocation, by even the most skilled of non-native L2 speakers, however experienced in translation they may be.

We believe that dictionary skills must be taught, carefully and thoroughly, if dictionary users are to extract from their dictionaries the information which lexicographers have put into them. Teachers will be better able to carry out such teaching if they are fully aware of exactly what their students are doing with their dictionaries, what they expect from them, and how easily they are satisfied during the process of consultation.

This is the type of knowledge that we have tried to elicit in the course of the Oxford and Tampere experiments.

The objective of these was to provide a basis from which to continue the study of students' dictionary use habits, in order both to help them to develop better skills in this regard, and to inform dictionary-makers of users' more specific needs. Some of the latter pose almost insoluble problems for compilers of desk-sized print dictionaries, but the situation will change when new dictionaries are compiled for electronic access only. The EURALEX Oxford and Tampere experiments were intended to be a first step towards transforming the print dictionary into an electronic one, by highlighting various types of lexicographical information which might be improved, or added, at that time. One of these is clearly lexical collocation, and another the syntactic environment in which a word is used. It is also clear that a dictionary without space problems could usefully provide more, fuller, and more intelligible guidance to help the users in their decision-making process. This study also provides some leads on what such a dictionary might do to combat user frustration.

APPENDIX I



EUROPEAN ASSOCIATION FOR LEXICOGRAPHY

DICTIONARY USER'S
BADGE NUMBER

COVER SHEET

1 DICTIONARY USER'S MOTHER TONGUE (=L1)?

2 DICTIONARY USER'S OWN ASSESSMENT OF L2 LEVEL
(tick one box)

beginner

intermediate

advanced

3 TASK BEING PERFORMED (tick one box)

L1 → L2
translationL2 → L1
translation

4 TEXT BEING TRANSLATED

Answers here should identify
the translation passage as e.g.
'Italian 1', or 'English 3' etc.

Language Difficulty

.

5 DICTIONARY OR DICTIONARIES BEING USED

When the Dictionary User selects a dictionary, write on one of the lines below
a brief form of its title (enough to identify it) and the name of the publisher
and use the letter thus assigned to it to indicate that dictionary in the
'Dictionary Used' box on the Recording Form.

NB: You may need to complete only one or two of the lines below.

	TITLE	PUBLISHER
A
B
C
D

APPENDIX 2

L1	→	L2
own language		other language
RECORDING SHEET		

DICTIONARY USER
 BADGE NUMBER
 SEARCH NUMBER &
 LOOK-UP LETTER
(see Recorder's Notes)

1 WHAT MADE THE DICTIONARY USER GO TO THE DICTIONARY?
(answer this only for the first look-up of any search; copy the word(s) from the translation text that sent Dictionary User to dictionary; you might want to include a short context and circle the actual problem)

2 WHAT DICTIONARY ARE THEY USING?
(give identification letter)

3 WHAT ENTRY ARE THEY LOOKING UP?
(write in capital letters the headword heading the entry being looked at)

4 WHY DO THEY NEED IT? *(circle a letter)*

A they don't know what the L2 equivalent of the problem expression is
 B they think they know what it is, but want to check
 C they know it but want grammatical information about it
(e.g. gender, complementation structures, correct preposition to use, etc; specify if necessary)

D they know it but want to find other help with using it
(e.g. typical examples of use; collocates; spelling; register, style or usage constraints etc; specify)

E other *(specify)*

5 HAVE THEY FOUND WHAT THEY WERE LOOKING FOR?
(circle one: 'yes', 'yes, but...' or 'no') yes yes-but no

6 IF YES, WHERE DID THEY FIND IT?
(in definition, headword translation, example, idiom, compound, phrasal verb or the translation of any of these, style indicator, usage note etc; say which)

7 WHAT ARE THEY DOING NEXT? *(circle a letter)*

A moving on to another dictionary
 B choosing a translation and ending this search *(go to 9)*
 C moving to another entry in the same dictionary

8 IF THEY ARE MOVING TO ANOTHER DICTIONARY, WHY?
(circle a letter)

A the headword they're looking for is not in this dictionary
 B they need more information about the point noted in Section 4 above
 C they need more information about something else *(say what)*

D they can't understand this dictionary *(say why)*

E they don't trust this dictionary *(say why)*

F other

9 IF THEY ARE ENDING THIS SEARCH, HOW DO THEY FEEL?

A satisfied they got the right information
 B doubtful about whether they got the right information
 C sure they didn't get the right information

10 ANY OTHER COMMENTS

(from either Recorder or Dictionary User, e.g. how the dictionary could be made more useful; specific dictionary skills that could be taught; ways in which this Recording Sheet could be improved, etc.)

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L2 → L1 <small>other language own language</small> RECORDING SHEET
--

DICTIONARY USER
 BADGE NUMBER
 SEARCH NUMBER &
 LOOK-UP LETTER
(see Recorder's Notes)

1 WHAT MADE THE DICTIONARY USER GO TO THE DICTIONARY?
(answer this only for the first look-up of any search: copy the word(s) from the translation text that sent Dictionary User to dictionary; you might want to include a short context and circle the actual problem)

2 WHAT DICTIONARY ARE THEY USING?
(give identification letter)

3 WHAT ENTRY ARE THEY LOOKING UP?
(write in capital letters the headword heading the entry being looked at)

4 WHY DO THEY NEED IT? *(circle a letter)*
 A to find the meaning of the L2 expression
 B to check that the L2 expression means what they think it means
 C other *(specify)*

5 HAVE THEY FOUND WHAT THEY WERE LOOKING FOR?
(circle one: 'yes', 'yes, but...' or 'no') yes yes-but no

6 IF YES, WHERE DID THEY FIND IT?
(in definition, headword translation, example, idiom, compound, phrasal verb or the translation of any of these, style indicator, usage note etc; say which)

7 WHAT ARE THEY DOING NEXT? *(circle a letter)*
 A moving on to another dictionary
 B choosing a translation and ending this search *(go to 9)*
 C moving to another entry in the same dictionary

8 IF THEY ARE MOVING TO ANOTHER DICTIONARY, WHY?
(circle a letter)
 A the headword they're looking for is not in this dictionary
 B they need more information about the point noted in Section 4 above
 C they need more information about something else *(say what)*

D they can't understand this dictionary *(say why)*

E they don't trust this dictionary *(say why)*

F other

9 IF THEY ARE ENDING THIS SEARCH, HOW DO THEY FEEL?
 A satisfied they got the right information
 B doubtful about whether they got the right information
 C sure they didn't get the right information

10 ANY OTHER COMMENTS
(from either Recorder or Dictionary User, e.g. how the dictionary could be made more useful, specific dictionary skills that could be taught; ways in which this Recording Sheet could be improved, etc.)

RECORDER'S NOTES

Start a new *COVER SHEET* for each dictionary user.
Use same cover sheet for all searches done by one person.

A *SEARCH* means all the dictionary use related to one specific problem in the translation passage; the search may lead from one dictionary to another and back to the first – it should all be recorded as part of the same search.

A *LOOK-UP* refers to looking up one single entry in a dictionary. Record the look-ups on *RECORDING SHEETS*. There are two types of Recording Sheet – one for L1→L2 translation and another for L2→L1 translation. Please be sure to use the correct one.

SEARCH NUMBER and *LOOK-UP LETTER* box on Recording Sheet

Every individual search gets a new number, e.g. 1, 2, 3 ...

Within a search, each look-up gets a letter, e.g. A, B, C ...

So the first recording sheet for the first search is marked 1A, the next sheet for the same search is 1B, and so on. Start a new look-up letter when the Dictionary User turns to another headword, whether it is in the same dictionary or a different one. When they move to a new problem, this becomes search number 2, and the look-ups within it will be 2A, 2B, etc.

When one person stops being the Dictionary User, clip together all their Recording Sheets with their *COVER SHEET* on top.

Don't spend a lot of time puzzling about the Recording Sheet. If it's not clear what to answer, or where to put something, use the space marked 'OTHER'.

Remember the *DICTIONARY USER'S BADGE NUMBER* box in top right corner of each page. This number is crucial and must be inserted on the Cover Sheet and on every Recording Sheet. Without it there is no link between the record and what it is recording.