

# Research into dictionary use by Polish learners of English: Some methodological considerations

## 1. Introduction

### 1.1. The need for research on dictionary use

The call for research on dictionary use has been present in the literature on the subject for a few decades now. The user perspective in lexicography goes back to the early 1960s and Barnhart's (1962: 161) statement that "[i]t is the function of a popular dictionary to answer the questions that the user of the dictionary asks, and dictionaries on the commercial market will be successful in proportion to the extent to which they answer these questions to the buyer". This claim along with the author's recommendation that "[t]he editor's very first concern ... must be to determine the probable buyer of a particular book" (Barnhart 1962: 161) imply a very basic, economic foundation for research aimed at recognizing the requirements of future dictionary owners and meeting them by tailoring lexicographic products accordingly – the need to attract prospective purchasers.

Today, the stimulating influence of market forces on research in lexicography is no doubt more important than over 40 years ago. The stiff competition on the contemporary market encourages the incorporation of innovative features into dictionaries. Kernerman (1996: 408) calls this a "game ... 'Who can think of a new feature to include in a new dictionary' ". Yet, the question of the usefulness of the innovations suggests itself, especially in view of the fact that the basis for the changes is as a rule shrouded in mystery, and publishing houses are infamous for being "tight-lipped about their commercial secrets" (Swanepoel 2000: 407). The absence of published research which would reveal the rationale behind such redesign decisions seems to justify Tono's (2001: 10) suspicion about at least partly intuitive rather than empirical basis for modifications in dictionaries. This, in turn, poses a real threat of a mismatch between the intended functions and the actual uses of the dictionary, as some information or dictionary features essential to lexicographers may be disregarded by ordinary users. Therefore, empirical research on dictionary use can serve the purpose of bridging the gap between works of reference and their users. While it is only natural that dictionaries should be evaluated according to how users interpret the information supplied there, rather than only according to the lexicographic material offered or the sales image of the products, it seems that "[r]esearch into dictionary use should provide a framework for all lexicographic production" (Hartmann 2000: 390), and not only test what has already been brought out.

Apart from the unclear, if not deliberately concealed motives for changes in dictionary design, Hartmann (1987: 11) lists three other reasons for research on dictionary use, i.e., erratic demands of dictionary reviewers, the quandary of dictionary users, who do not know what to expect from dictionaries, and the quandary of teachers, who do not know which one(s) to recommend. Taking the viewpoint of the users themselves, the need for research follows from their general reluctance to consult dictionaries and ignorance of how to do it, as well as from the fact that dictionaries are still too difficult and that their consultation may be disruptive (Bogaards 1995; Hulstijn -- Atkins 1998: 10).

As there is no single undifferentiated dictionary user, specific user groups should be taken into account in research. On top of that, attention needs to be paid to information categories, contexts of dictionary consultation and lookup strategies. Thus, the basic areas of research on dictionary use concern user typology, dictionary typology, needs typology and skills typology (Hartmann 1987: 12). It is expected, however, that it is the consideration of dictionary users that will influence lexicography in a way comparable with the impact exerted on the field by the computer in the past few decades (Kernerman 2000: 826). The shift towards “utilitarian lexicography” (Rundell 1998: 337) means that any failure on the part of lexicographers could be attributed to the failure to consider the user. Besides, it can be hoped that the emphasis on the user perspective will put an end to pedagogical lexicography seen as “a succession of more or less assumed solutions to assumed problems” (Diab 1990: 39), the basis for which could possibly be found, also, in the increasing market competition.

The study of dictionary use is an urgent, but relatively little explored issue. The next section offers a brief overview of the origins of the research in this field and its initial development in the decade following Barnhart’s seminal statement, referred to above.

## 1.2. Beginnings

Barnhart’s (1962) pioneering contribution to research on dictionary use provided the first attempt at quantifying knowledge on the function of the dictionary. The research was based on 108 questionnaires sent to teachers, who were asked to have their freshmen students rate 6 types of information offered by American college dictionaries. The results indicated that meaning and spelling were the most important, whereas etymology – the least. Still, the fact that the study relied on indirect reports of the teachers rather than direct observation of the students themselves as well as the relatively small sample diminish the value of the findings. Moreover, the questionnaire itself is not provided, nor are any details on the numerical data it yielded, which makes it impossible to gain any deeper insight into the survey.

Quirk’s (1974) study, the first scholarly attempt in Britain to investigate university students’ attitudes to their dictionaries (Hartmann 1987: 14), was also based on a questionnaire, but, in contrast to Barnhart’s, filled out by dictionary users themselves. The 30-item questionnaire administered to 220 undergraduate students in London was to supply “more objective evidence” to “folkloristic beliefs” (Quirk 1974: 148). The results largely overlapped with those obtained by Barnhart in the USA, as meaning and spelling turned out to be the most important to the dictionary users, who did not appreciate etymology and pronunciation.

The two surveys were important for practical purposes, since, a few years before the introduction of the sociological perspective into the lexicographic debate by Wiegand (1977), they could help lexicographers decide what to include in dictionaries. The sociological perspective implies that the use of the dictionary is determined not so much by the categories of information provided by lexicographers, but the communicative needs of dictionary users. It follows that the reduction of communicative problems stemming from lexical deficit should be the overriding objective of a dictionary.

Although the early research was far from comprehensive, quite soon, already in the 1970s, it started to grow international. Poland has its famous contribution to the research at that time. Tomaszczyk’s (1979) study, which sparked off further interest in the field, was in general one of the first going beyond the English monolingual context (Hartmann 1987: 14). The survey was meant to better recognize the dictionary needs of learners and translators. As many as 450 subjects, including Polish learners of English, completed a questionnaire. Like previously, the results indicated that meaning and spelling were of greater importance as motives for dictionary search than etymology. The findings also revealed the respondents’

preference for bilingual dictionaries over monolingual ones, which, however, tapered off with the development of proficiency in English. Unfortunately, Tomaszczyk failed to reproduce the questionnaire and offer a complete statistical analysis of his data.

In summary, while Barnhart's survey laid the basis for empirical research in lexicography, it is also difficult to overestimate the research conducted in the 1970s; not only was it unprecedented, but it also initiated a long line of detailed studies worldwide. Still, at that incipient stage, the research on dictionary use left a lot to be desired. For one thing, it was based on questionnaires, that is an indirect, and thus inherently limited, surveying technique. Additionally, the frequent lack of verifiable numerical data or samples of the materials used as well as the inadequate application of statistical tools in the early studies made them non-replicable and virtually precluded any thorough comparison with later analyses.

The next section opens with brief criticism of the questionnaire, which do doubt stimulated the search for methods of investigation that could bring lexicographers closer to real dictionary use. Such more refined methods of research are then briefly described and selected instances of their use are given.

## 2. Methodology of dictionary use research

### 2.1. The questionnaire

Skepticism over the full reliability of the questionnaire was frequently expressed in the literature on the subject (Bogaards 1993; Crystal 1986; Hartmann 1987; 1989; Hatherall 1984; Hulstijn -- Atkins 1998: 10). In this regard, it is impossible not to refer to Hatherall (1984), who, as one of the first, emphasizes that the method throws light not so much on the actual use of dictionaries as on the behavior of subjects responding to a given questionnaire, often guided by the desire to please the researcher or the need to project a positive image of themselves. Hatherall's (1984: 194) seminal question, i.e., "[a]re the subjects saying what they do, or what they think they do, or what they think they ought to do, or indeed a mixture of all three?" best encapsulates the basic doubts about the effectiveness of the method. Others concern its orthodoxy (Crystal 1986: 76, 78), related to the way questions are posed as well as researchers' presuppositions. Respondents, usually reluctant to use dictionaries at all, are incapable of answering precise questions about the frequency of dictionary consultation or the circumstances of and the motives for dictionary lookup, let alone grasp notions familiar only to linguists and lexicographers. Besides, heterogeneity of samples, poor statistical treatment of elicited information and incomplete reporting on results and materials remain the most frequent shortcomings of the application of the method (Bogaards 1993: 19). The data gathered in this way, interesting and thought-provoking as they are, contribute more to the formulation of hypotheses than testing what has provided a point of departure for research. While the method may thus be seen as largely inconclusive, it spares time, is relatively cheap, permits testing large samples and yields results that are easy to quantify. Moreover, as noted by Lew (2002), it may be the only tool applicable on grounds of cost, ethics or feasibility, which, under the circumstances, makes it an extremely valuable source of information. For example, it often proves handy when it comes to the analysis of dictionary ownership or situational contexts of consultation. Besides, the use of e-mail queries sent to respondents (Nesi 1999) makes it possible to elicit information from subjects even without accessing them directly or incurring the costs of posting paper forms. Nonetheless, the low return rate of such queries may mean that results are not quantifiable at all.

## 2.2. Direct observation

Hatherall (1984) does not limit himself to the heavy criticism of the questionnaire; he recommends direct observation, that is watching dictionary users in action, as “the only reliable method of collecting data on dictionary user behaviour”. He himself had his subjects complete a protocol, where they were to note each item looked up in a dictionary when translating a text from English to German as well as the effectiveness of the search. This is obviously an example of what Tono (2001) calls *participant observation*, where “observers themselves engage in the activities they set out to observe”. Atkins -- Varantola’s (1998b) research instantiates *non-participant observation*, as lexicography students were made to fill out protocols describing the use of dictionaries by the subjects they watched working on a translation task. Filmed protocols accompanied by oral interviews were in turn used by Ard (1982) in an attempt to examine the use of bilingual dictionaries while writing.<sup>1</sup> Thinking-aloud protocols, aimed at clarifying the nature of cognitive processes associated with dictionary consultation, used for instance by Neubach -- Cohen (1988) or Whyatt (2000), make it possible to record the processes in real time. Knight (1994), by contrast, employed an immediate recall protocol after a reading task.

Today, technological developments offer a more objective approach to monitoring dictionary consultation. Computers supply the most detailed record of the activities performed by subjects, including time spent on specific tasks, and give step-wise access to the information. Although some of the dangers associated with direct observation by humans may be avoided in this way, it should be borne in mind that some students are still computer illiterate and ignorant of electronic elicitation techniques. Besides, school and university equipment would most often pose an insurmountable obstacle to those who would wish to implement such methods. Needless to say, Polish researchers would be beset by such practical problems as well.

While direct observation makes it possible to trace the process of decision making in the course of dictionary consultation, it may intimidate subjects, make them wish to please the researcher or otherwise interfere with the consultation itself. It also fails when it comes to processes which cannot be recorded or observed. On top of that, it is time-consuming and usually entails serious restrictions on the size of the sample, which may preclude the application of appropriate statistical tools. All this suggests an appeal similar to Hartmann’s (1989: 108) for “more controlled test settings and larger samples ... to build up intersubjective knowledge about the ways and means of successful dictionary use”. These requirements are part and parcel of the experimental approach, claimed to be the most ambitious and complex, but also, unfortunately, the least tried (Hartmann 1989: 109).

## 2.3. Experiments

The need for experiments is probably most clearly expressed by Crystal (1986: 77), who poses a simple question:

[i]s a definition with a picture of more or less help than a definition without a picture? The answer is to be obtained not by asking the informant direct (along the lines of ‘Which do you prefer?’) but by giving him a task which requires that he use the information in the definition in some way, and then seeing whether his response is facilitated in the picture-present or the picture-absent conditions.

The most important feature of experiments is that a given task is performed in strictly controlled and manipulated conditions, which makes it possible for experimenters to

investigate the role of the variable(s) they are interested in by comparing the results obtained by control and experimental groups (Tono 2001: 70). Such “laboratory” (Hartmann 1989: 109) conditions permit getting first-hand data on actual dictionary consultation, rather than just an opinion of it.

The first application of the method in research on dictionary use dates back to the early 1980s. Bensoussan -- Sim -- Weiss (1983), who investigated the effect of dictionary use on performance in reading comprehension tests, are credited with the introduction of the experimental dimension into the field (Diab 1990). In their study, over 700 subjects were required to read texts and answer reading comprehension questions with or without the help of monolingual and bilingual dictionaries. Apart from the general preference for bilingual dictionaries, no relationship was found between dictionary use and test results. An impressive though very early experimental study was conducted by Tono (1984), who had 402 randomly selected subjects translate a text interspersed with nonce-words, for which special dictionaries were compiled. It turned out that, more often than not, the first translation equivalent was chosen unless there was an obvious clue that the initial sense was inappropriate.

Even the two studies prove that some artificiality of experimental tasks and conditions is an indispensable trade-off for direct access to quantifiable and, importantly, statistically manageable results of actual performance. Besides, in view of the complexity of dictionary consultation, it is advisable to focus not on the whole process in a single experiment, but just on selected stages (Bogaards 1993: 26). Still, experimentation necessitates not only strictly controlled test settings, but also appropriate, preferably random, sampling and precise tasks. Such rigorous methodology acts as a disincentive to all but the most determined scholarly entrepreneurs ready to devote a lot of time and financial resources to run experiments. Nonetheless, proper use of experimental designs, some of the most needed and challenging of which are outlined in what follows, should be strongly encouraged.

## 2.4. Multi-factor design in dictionary use research

As identifying and verifying cause-effect relationships appears to be a fundamental part of what science is about, so researchers in dictionary use like to concern themselves with identifying the relevant factors involved in dictionary use situations.

Hulstijn -- Atkins (1998) identify and list no less than fourteen factors which, they claim, should be investigated as potential independent variables affecting dictionary use. An early paper by Atkins et al. (1987; and, to a lesser degree, also Hulstijn -- Atkins 1998: 12-13) appears to advocate a methodology of fixing all potential independent variables except one which would be manipulated as a design factor. Such an approach would result in a number of *uni-factor* designs, in which only one criterion variable is present at one given time. These individual studies would then build up to form a complete picture. However, the one-variable approach, although relatively straightforward in implementation, suffers from at least one important flaw: it does not allow the examination of interaction effects between different criterion variables. If only for this reason, the present authors believe it is methodologically commendable to attempt to investigate the influence of several variables at a time (as we have done in Dziemianko 2004; Lew 2004). Having said that, Atkins et al. (1987) are partially right in that there are limits on how many variables may be addressed within a single study. Some of these limits will be discussed below in the specific context of dictionary use research.

### 2.4.1. Logistical limits to multi-factor designs

Multi-factor designs of high complexity place heavier demands on the number of subjects, as more complex designs require a comparatively larger number of cases to properly populate the design matrix. Yet, as is well known, human subjects are notoriously expensive and difficult to obtain. The general problem with access to human subjects is aggravated in the context of dictionary use research, as our subjects, in order to be useful in such research, must be representative of a certain type of dictionary reference needs and habits, and so the population of fitting subjects may be rather scarce and thus hard to reach. Still, it would appear that a cohort of uni-factor studies would actually require a greater overall number of subjects than an equivalent single many-variable design, but the difficulty with the latter approach may lie in securing access to a large number of subjects at one time.

Studies involving many factors tend to be highly complex in terms of design and computation. No less important is the difficulty in interpreting results, particularly for higher-order interactions. One actual study which is probably a good illustration of the scale of difficulty involved is the EURALEX/AILA Research Project on Dictionary Use (Atkins -- Varantola 1998a), where the project team needed no less than a dozen years to process the immensely complex data, and the final analysis did not include any statistical evaluation of the differences emerging between different combinations of factors, with the reported statistics being limited to summarizing the data.

Designs with large numbers of variables tend to be rather sensitive to missing cases in the data: unexpected failures to collect acceptable data for some combinations of factors may cause the multi-way model to become inestimable due to gaps in the covariance matrix. Such unexpected and unwelcome gaps in the data can also readily occur in correlational and mixed (i.e. correlational-experimental) designs, where levels of criterial variables are beyond the researcher's control and may not be known exactly prior to the study. For example, in one analysis of the ratings given to dictionaries by their users (Lew 2004: 109), a complete model with three predictors (dictionary type, dictionary choice, proficiency level) could not be evaluated statistically, because monolingual dictionaries turned out not to be named by any subjects at the lower proficiency levels, thus certain combinations of factor levels were missing and the model – underspecified.

### 2.4.2. Subject-related limits to multi-factor designs

Another limitation to multi-factor design that is specific to dictionary use study lies in the difficulty of using the same experimental materials (test forms, texts, etc.) with subjects of widely varying reference needs, reference skills, and foreign language competence. For the experimental situation to be realistic, materials should, to some extent at least, match those personal characteristics of the subjects which are relevant to their profile of dictionary use. It follows from the above that it may be difficult to obtain satisfactory results from studies engaging dictionary-using subjects from varying backgrounds, and that careful segmentation of dictionary users may be the proper way to proceed. Such segmentation, in turn, should ideally emerge from research within what Hartmann (1987) refers to as *user typology*.

### 2.4.3. Dimensionality reduction

Since so many factors have been singled out as possible determinants in the process of dictionary use (Hulstijn -- Atkins 1998), multivariate methods of dimensionality reduction might be fruitfully employed to help make sense of the very complex data, as already suggested several years back by Tono (2001: 72). Despite Tono's sensible encouragement, the only application of such methods within the dictionary use research to date with which we are

familiar is Lew (2004: 127-8), where Principal Components Analysis and Cluster Analysis were performed on subject-reported frequency data on the use of dictionary information types.

### 3. Dictionary use research in the Polish context

Research into dictionary use in Poland has a respectable history. It is impossible not to mention the groundbreaking study by Tomaszczyk (1979), one of the most-cited investigations in the literature on dictionary use worldwide. Unfortunately, after such a promising start, little has been done in the field for the two decades following Tomaszczyk's paper. A new wave of recent studies (Dziemianko 2004; Lew 2004; Sobkowiak 1999; Szczepaniak 2003; 2004), however, gives hope for more vigorous advances in dictionary use research in Poland.

#### 3.1. MA projects in dictionary use research completed at the AMU School of English

The aim of this section is to familiarize readers with the results of a number of MA projects in the field of dictionary use research completed at the School of English of Adam Mickiewicz University.<sup>2</sup> These results have not been published thus far; this makes access to them rather difficult if not impossible, and yet the present authors believe that the results may be of interest to metalexicographers, lexicographers, as well as some FLA and EFL researchers, particularly in the Polish context, and that they deserve at least a brief note. An attempt will be made below to group the studies into three major categories according to the main focus of each study, although strictly speaking the studies will typically also cover areas of dictionary use research lying beyond the principal category under which they are listed. Admittedly, the outline of the methods used by the authors of the studies in question, given below together with the summary of the results they yielded, will make it possible to realize how much still remains to be done to witness the actual application of advanced statistical tools or the more elaborate designs and methods referred to in the preceding sections. Nonetheless, the focus on MA studies from the AMU School of English alone makes it clear that young people in Poland *are* interested in research on dictionary use, shows the directions in which the interest is developed and inspires hope that the progress in this area will be further boosted by other dissertations completed at the School.

##### 3.1.1. Reference needs

Jakubowski (2001) looks into the use of bilingual and monolingual dictionaries by Polish high school learners. Using an 18-item questionnaire on a sample of 86 subjects, Jakubowski focuses on the comparison of his Polish subjects with subjects of other nationalities, as reported in other studies (such as Atkins -- Varantola 1998a; Baxter 1980; Béjoint 1981; Hartmann 1983). Also, he contrasts results for two groups of learners attending English courses of two different intensity levels; he refers to the two groups as majors and non-majors, respectively. As expected, the preference for the bilingual dictionary is less pronounced among the majors compared with the non-majors, but it is unmistakably there in both groups. Interestingly, even though the bilingual dictionary is clearly used more than the monolingual, Polish high school students seem to be using the monolingual dictionary more than a group of Japanese *university* students (Baxter 1980). In terms of information types, monolingual dictionaries are most commonly used for examples of usage, pronunciation, and synonyms. In decoding activities, monolingual dictionaries appear to be seen as better than

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

Łakomski (2001) compares the role of dictionaries in two disparate groups of users: Polish high-school students and Scandinavian border workers. It is Łakomski's contention that the latter group is a projection into the future of the students' future careers in the united Europe. While the thesis as such is controversial, Łakomski's results may be interesting in themselves. Based on a battery of questionnaires and a match-definition-to-word test, Łakomski concludes that Polish high-school students use dictionaries more intensively and more effectively than Scandinavian border workers. The sample, however, is very small, so the conclusions must be viewed with caution.

### 3.1.2. Reference skills

Głowacka (2001) looks into the difficulties that Polish learners of English experience with dictionary labels. Using a combination of a questionnaire and a test administered to 62 learners, Głowacka concludes that Polish learners have serious problems understanding typical dictionary labels. Further, and contrary to expectation, she finds that the provision of in-class instruction targeted at explaining dictionary metalanguage does not appear to improve the level of comprehension of dictionary labels.

Pieścikowski (2004) applies Atkins -- Varantola's (1998b) methodology to three small groups of Polish university students, asking them to record details of dictionary work while engaged in L2-L1 text translation. The results indicate that the principal reason for consulting dictionaries in this setup is to locate an L2 translation, and the second most common reason is to check the translation candidate. Only a very small minority of dictionary searches have been found to serve other purposes. Also, the results reconfirm the clear dominance of the (general) bilingual dictionary for this type of task. Finally, most users are satisfied with the results of their dictionary consultation, and, more generally, with their dictionaries.

### 3.1.3. Dictionary effectiveness

Dziapa (2001) compares the effectiveness of vocabulary acquisition through reading by Polish learners of English using bilingual and monolingual dictionaries. Dziapa uses two groups of learners: beginners and intermediates. Within each group, the subjects were randomly assigned to one of two dictionary conditions, learner's monolingual (*Oxford Advanced Learner's Dictionary of Current English*) and large general bilingual (*Wielki słownik angielsko-polski i polsko-angielski*). The subjects were asked to read a number of texts with the help of the dictionaries. They were subsequently tested (now without access to dictionaries) on a number of lexical tasks involving items from the texts. Overall, results point to an advantage of the bilingual dictionary for beginners, and a relative lack of such an advantage for intermediate learners. However, the direction and magnitude of the advantage also depend on the type of lexical tasks. The monolingual dictionary seems to result in relatively best success in providing definitions.

Szymańska (2001) tests the effectiveness of the *Cambridge International Dictionary of English* entries against a traditional bilingual dictionary in vocabulary teaching and vocabulary acquisition with intermediate Polish learners of English (all high-school students). The study reveals an advantage of the bilingual dictionary which, however, diminishes with



time. Instruction in the use of the dictionary appears to improve its effectiveness in aiding production and word retention. Also, the dictionary users express favorable opinions of the dictionary in feedback questionnaires. Teacher questionnaires reveal that the majority of teachers do not normally train their students in dictionary use. Szymańska uses a quasi-experimental setup, with the three groups (*Cambridge International Dictionary of English*, bilingual, control) possibly differing in English language proficiency level, thus the results must be seen as tentative.

Ślotała (2001) compares learners' dictionaries with non-lexicographic publications (books and journals) in terms of their effectiveness in helping Polish learners of English to locate cultural information. Access to cultural information is found to be both faster and more accurate in the dictionary group, even though, according to questionnaire responses by the same subjects, dictionaries occupy a distant position in the ranking of sources of cultural information. It must be pointed out though that the nature of the tasks prioritized detailed, specific information, which might have privileged dictionaries due to their efficient indexical access structure. One might question whether the advantage would still hold for tasks of a more exploratory nature.

In a study devoted to the role of examples in the bilingual dictionary, Purczyńska (2002) administered a test and a questionnaire to 15 students at a public junior high school ('gimnazjum'). Using a careful randomized design with statistical evaluation, Purczyńska tests the influence of dictionary examples on the students' choice of grammatical tense, but finds no evidence of any significant effect.

Kroma (2001) tests the effectiveness of three types of marginal glosses in developing Polish EFL learners' definition skills. Although marginal glosses are not (by most definitions) dictionary entries, the two have much in common, so the results are probably relevant to dictionary microstructure. The three formats used in Kroma's experiment are: English definitions, Polish equivalents, and a combination of the two. Subjects were working for a period of four weeks with several texts with glosses in one of the three formats. After this training period, the subjects were asked to provide English definitions for nine English words (Polish equivalents were also given to help clarify the meaning). To assess the quality of the definitions produced by the learners, the definitions (with the original words removed) were presented to other students at the same level, whose task was to provide Polish items that most closely corresponded to the definitions. The Polish items were then evaluated by the experimenter. The evaluation scores are taken to reflect the quality of the subjects' original English definitions, on the assumption that the successful definitions are those that allow other students to accurately guess the meaning and express it in Polish. Results show success rates of 0.41, 0.33, and 0.11 for L2 (English only), combined, and L1 (Polish only) glosses, respectively. The difference between L2 and combined groups is not significant, but the remaining two pairs exhibit statistically significant differences in pair-wise t-tests. An intriguing finding is that the combined glosses score somewhat (though not significantly) lower than L1 glosses, even though they are in fact L2 glosses, with the addition of a Polish equivalent at the end. Kroma's interpretation of this finding is that the subjects' defining skills benefit most from exposure to English definitions and being forced to process them deeply. Adding Polish equivalents makes comprehension of glossed words easier but probably reduces the time and effort involved in processing the English definition. Kroma's study gives some substance to Baxter's (1980) plea for using monolingual dictionaries in order to improve learners' defining skills. Unfortunately, the results cannot be trusted unreservedly, since Kroma does not use random assignment of subjects or evaluators, partially for practical reasons.

The last three sections make it clear that reference needs and skills as well as the effectiveness of dictionary use present challenging areas of study for MA students at the

AMU School of English. Although some of the investigations referred to above do leave room for improvement and the results they yield cannot be taken without any reservations, the analyses are precious in themselves. While some of them further confirm in the Polish context what has already been demonstrated for subjects of different nationalities, others suggest interesting points that deserve further scrutiny. Encouraging as they are, they also imply the need for improvement in the area of research on dictionary use to make it still more beneficial to the learner. Some possible and welcome changes that should take place in the field, also, but not only, in the Polish context, are suggested below.

#### 4. Recommendations for future research

In the late 1980s, research into dictionary use was claimed to reflect the immature state of the art; it was seen as small-scale, non-representative, non-comparable, non-correlational and non-replicable (Hartmann 1987: 27). Unfortunately, even much more recently Swanepoel (2000: 404) described the research as still necessitating “‘a quantum leap’ into the realm of scientific replicability”. Even though the number of articles on dictionary use research has grown substantially in recent years, “one may note only a slight increase in experimental studies ... while the number of anecdotal reports has been holding steady as a substantial percentage of the whole” (McCreary -- Dolezal 1998: 616).<sup>3</sup>

A very serious limitation of research on dictionary use consists in sampling. Many projects rely on university students, which gives a distorted, if not incorrect picture of dictionary use and users. Kernerman (2000: 827) notes that the majority of dictionary users are not university students, but high school students, hence the need for a shift in the study of dictionary use from the advanced to the intermediate, or even elementary level. While Kernerman’s claim would be more convincing if backed up by numerical data, there is no denying the fact that researchers interested in dictionary use are most often also university teachers, so the research they conduct naturally focuses on their students, or those who the students happen to teach. Sampling becomes accidental, and the projects are confined to classroom behavior. It is worth noting that all the Polish studies cited in section 3.1 except for Łakomski’s are a case in point. Thus, Swanepoel’s (2000: 410) call for a comprehensive “taxonomic account of the kinds of situations in which different types of learners use what kind of dictionaries and for what purposes” seems to pertain also to the Polish context. Besides, in the case of accidental samples, or samples of convenience (Chein 1962: 515; Cohen -- Manion 1994: 88; Johnson 1992: 111), it is unclear what general population they represent and thus – to whom conclusions can be generalized. However, methodologically advisable methods of sampling, such as random sampling or stratification, often prove too costly and tedious. Still, the latter is especially advisable, and feasible, in the context of heterogeneous Polish classes in high schools, where the identification of approximately homogenous strata which can be further sampled either randomly or accidentally appears to be a must. Unfortunately, the use of intact classes as experimental and control groups remains a rule rather than an exception in research on dictionary use.

To be maximally useful, experimental studies should target specific types of users. Investigations into dictionary user typology should preferably precede detailed studies of patterns of dictionary use. Subject profiling, e.g., by means of pre-tests, could then determine sampling.

Hulstijn -- Atkins (1998: 11) call for more interaction in the study of dictionary use, which, among other things, makes it possible to elicit decisions in real time. Today, straightforward interaction and its detailed description are possible thanks to computers, whose extensive use in research on dictionary consultation should be strongly encouraged, and in the Polish context – initiated.<sup>4</sup>

Besides, the research in question should become truly interdisciplinary and cross-cultural to integrate techniques applied worldwide in several fields, e.g., linguistics, sociology, psychology and IT (Hartmann 1989: 105). Swanepoel (2000: 409) sees an essential prerequisite for the awaited quantum leap in “itemizing, evaluating and ... integrating the existing research methodology, theoretical developments and research results in the variety of disciplines”, such as educational and cognitive psychology, SLA, CALL or research on bilingualism. It is hoped that Sobkowiak’s (1999) study, “a recent example of a truly interdisciplinary research report” (Hartmann 2001: 124), has indeed set an example, not only for Polish researchers.

The complexity of dictionary consultation suggests also the need for more extensive triangulation. The use of two or more methods of data collection in a single study is likely to explain the process more fully, and often yields both quantitative and qualitative data. Hartmann (1989: 105) appeals even for the application of “the whole panoply of (social) scientific methodology” to particular projects.<sup>5</sup>

This brief overview of some methodological issues related to research on dictionary use, with an emphasis on the Polish context, can hardly exhaust the topic. Yet, the methods available to researchers and their awareness of the methodology should stimulate more exhaustive studies. Although the solution to some of the problems pointed out above does fall outside the purview of researchers themselves, others can be easily eliminated, e.g., by proper design or sampling. The projects which have already been conducted in Poland as well as the growing conscientiousness of Polish researchers themselves, including the present authors, encourage a more optimistic vision of future developments in Polish research on dictionary use.

Notes:

<sup>1</sup> Based on the responses of only two subjects, the research deserves the name of case study, which, due to the small sample size, captures the subtlety of each case, but, for the same reason, precludes any broad generalization (Tono 2001: 67).

<sup>2</sup> Two of the studies referred to below, i.e., Purczyńska (2002) and Pieścikowski (2004), were supervised by Arleta Adamska-Sałaciak, others – by Robert Lew.

<sup>3</sup> In the annotated bibliography of Dolezal -- McCreary (1999), for example, reference is made to 521 publications on research in pedagogical lexicography, only 14 of which concern experimental studies, “generally controlled with independent variables and a dependent variable and ... statistically significant results” (McCreary -- Dolezal 1998: 613).

<sup>4</sup> See also De Schryver -- Joffe (2004).

<sup>5</sup> Interestingly, Nesi (1999: 41) stresses the inadequacy of non-experimental methods to test the use of grammatical information in dictionaries for children, who are not aware of the benefit derived from this kind of information, but nonetheless do achieve substantially higher scores on grammar recognition tasks when offered higher levels of grammatical information in the dictionaries. There are also other instances where the information elicited from subjects by means of introspective or retrospective reports turned out to be at odds with the results obtained from them in a task, which further justifies the need for triangulation (Cumming -- Cropp -- Sussex 1994; Nesi -- Hail 2002).

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