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QUALITY OF MULTILINGUAL SPECIALISED LEXICOGRAPHY IN POLAND

Abstract

The aim of this paper is to evaluate the state of multilingual specialised lexicography in Poland over a period of almost 70 years. Based on the analysis of macro- and microstructures of multilingual dictionaries published in Poland since 1945, the study offers a thorough insight into the key parameters of such works, including their general lexicographic structure, presentation of the content as well as potential usefulness for users. Compared with the achievements of theoretical lexicography, the terminographic analysis has enabled the author to draw meaningful conclusions and put forward applicative proposals for future dictionaries.

Keywords: terminography; macrostructure; microstructure; dictionary research; terminographic analysis; multilingual dictionary

Introduction

Progress in all areas of human activity depends, among other elements, on effective professional communication. Exchange of knowledge, largely taking place by means of professional (specialist) texts, written or spoken, stimulates new discoveries, enables researchers and engineers to rethink their ideas, replicate experiments, apply the results obtained as well as train a new generation of specialists. The backbone of such language-based knowledge exchange are terms, i.e. linguistic signs representing chunks of specialist knowledge, or concepts (Felber & Budin, 1994, p. 26).

One of the most comprehensive carriers of terms is the terminological dictionary (hereinafter: TD). Its role in professional communication is undeniable, as it serves as a repository as well as generator of knowledge. In international communication these are bilingual and multilingual specialised dictionaries¹ (hereinafter: BTD and MTD, respectively) that are in the forefront of ensuring uninterrupted knowledge transfer between specialists speaking different languages. The fact that English has

¹The term ‘specialised dictionary’ and ‘terminological dictionary’ are used here interchangeably.

become the *lingua franca* of science and technology has only strengthened the need for such reference works.

As the definition holds, TD is an organised collection of terms of one or a few fields (Lukszyn, 2005, p. 105). Accordingly, any haphazard aggregation of terminology cannot be considered a TD. A dictionary must meet specific criteria to become a quality terminological product, a macrosign of professional knowledge helpful for its users. Yet, far too often low rather than high quality has been cited in dictionary reviews, and this is the quality of lexicographic reference works that has had an impact on users' trust in them. According to Hartmann "there is an undercurrent of suspicion, a feeling shared by many professional translators (and, incidentally, quite a number of language teachers, too) that dictionaries cannot be trusted" (Hartmann, 2007, p. 46).

This paper attempts at evaluating the state of Polish multilingual specialised lexicography by examining the quality of MTDs published in Poland over a period of almost 70 years. First, the paper aims at defining the notion of quality in lexicography. Next, the most commonly cited errors in TD are considered. These are followed by a list of quality-oriented assumptions that are the basis for the assessment of MTDs published in Poland between 1945 and 2013. This evaluation enables the author to put forward solutions to be considered for future dictionaries.

Defining Quality in Lexicography

The notion of quality has been permeating metalexical discussion for some years now. However, its definition in the lexicographical context has not been outlined thoroughly to date. Lexicographic quality is often perceived through the quality of the products of lexicographers' work — dictionaries. Regrettably, dictionary quality has not been well defined either. It is therefore necessary to reconstruct its core meaning in lexicography, and in specialised lexicography in particular, so as to be able to set the framework for assessment of multilingual specialised works in Poland.

The online Oxford Dictionaries define 'quality' as follows:

1. The standard of something as measured against other things of a similar kind; the degree of excellence of something;
2. A distinctive attribute of characteristic possessed by someone or something. (Oxford Dictionaries, 2014).

According to the definition (1), it is impossible to talk about quality without undertaking evaluation of some kind. In the case of dictionaries, one can therefore refer to quality of any given work only when it has been compared to other dictionaries (of similar kind). The notion of 'similar kind' seems very important in this context as one cannot, for example, evaluate general language dictionaries against specialised (or LSP) ones, and *vice versa*. In more detailed evaluation such studies should encompass dictionaries with as many common characteristics as possible. Of considerable help in such cases are existing typologies² of dictionaries. It is worth

²Typologies that are based on analyses of existing dictionaries, as opposed to their theoretical models.

mentioning that such dictionary assessment is equal to dictionary criticism,³ and therefore the principles of the latter may be used in the study of dictionary quality.

Dictionary quality is often quoted in the context of fulfilling or failure to fulfil user's needs. In such cases evaluation takes a special form of comparing the existing work (the one being investigated) to a hypothetical model dictionary that could (hypothetically) meet those needs. The resulting set of dictionary parameters can be used as the guidepost for lexicographers of future dictionaries. This is also where practical lexicography meets its theoretical counterpart.

Quality in Specialised Lexicography. Faults in Terminographic⁴ Works

Based on general theory of terminology, Felber and Budin (1994) put forward a set of general terminographic principles that can be used to draft quality requirements for TDs (see below). The principles are summarised in four major points:

1. All terminographic data must be reliable and complete.
2. [Authors] should strive at using uniform terminographic data, terminographic symbols, order of data within conceptual entries as well as uniform entries in specialised dictionaries.
3. The order of data within entries and the order of the entries must be adapted to the manner in which the set will be used.
4. National and international terminographic standards should be applied, whenever possible.

(Felber & Budin, 1994, p. 173).

Gajda (1990) provides a more specific list, compiled with specialised dictionary assessment in mind. The researcher states that specialised dictionary evaluation is strictly connected with the requirements⁵ that dictionaries are supposed to meet. Some of the general requirements are as follows:

- adequate presentation of terminology of a given branch,
 - inclusion of all necessary information on terms,
 - rejection of unnecessary data that would otherwise hinder looking up the required information,
 - unification of composition and terminographic method between dictionaries so that the user can easily move from one dictionary to another,
 - compatibility between the author's methodology and macro- and microstructure.
- (Gajda, 1990, p. 122).⁶

Failure to meet the principles listed above results in numerous errors in TDs. Grinev enumerates the most common faults in TDs:

- multifunctionality that hinders reception of the content,
- subjective choice of lemmata,

³According to Hartmann, 'Dictionary criticism [is] the description and evaluation of a dictionary or other reference work, usually in comparison with others (Hartmann, 2001, p. 172).

⁴The author uses the terms 'specialised lexicography' and 'terminography' synonymously. Some scholars, however, insist on clear demarcation between the two 'subfields' and list differences in the scope of methodological approach and end-product properties — a case summarised and easily refuted by Bergenholtz and Kaufmann (Bergenholtz & Kaufmann, 1997).

⁵No source of such requirements has been provided.

⁶Translation mine, M.L.

- inadequate microstructure composition for the dictionary type,
- unclear principles for assigning definitions to sets of terms,
- defective definitions,
- unsatisfactory meaning delimitation,
- insufficient information on semantic relations between terms,
- insufficient information on morphological and derivational composition of terms,
- lack of clear principles of phraseology presentation,
- lack of necessary indexes.

(Grinev, 1995, pp. 10–11 cited in Lukszyn & Zmarzer, 2006, p. 156).⁷

The above considerations enable us to distinguish three variables which need to be taken into account while addressing the issue of quality in TDs, namely the terminological data, the dictionary structure and the user. Obviously, all three elements merge in the final product, so detailed quality assessment that proceeds from the TD as a whole to individual parameters requires careful consideration of each variable against the others. The final goal of any global terminographic assessment is proposing new, or revisiting existing, methodologies in specialised dictionary-making, leading to compilation of ever-better TDs.

Ensuring Terminographic Quality

Terminographic quality can be achieved through meticulous application of a set of procedures at various stages of specialised dictionary-making. The initial stage requires that “a user profile of a use group be drawn up. In addition, it should be decided in advance which functions the dictionary is intended to fulfil” (Bergenholtz & Tarp, 1995, p. 90). The researches point out that “far too often, inadequate preliminary work leads to an end product of inferior quality, which does not live up to the requirements the dictionary itself claims to fulfil” (Bergenholtz & Tarp, 1995, p. 90). This is a clear instruction for terminographers to carry out user research prior to any dictionary work, as the results will have impact on the final structure of the work compiled. Moreover, multifunctionality is often regarded as a feature of low quality dictionaries, because in order to attain the goals outlined in a dictionary, its structure would have to be enormously extended, becoming overloaded, while to work itself time-consuming and expensive. Put simply, dictionaries that claim to serve everyone, in fact do not serve well anyone (Bańko, 2001, p. 13).

User research does not end with the publishing of a TD. Since many more variables influence the final composition of any dictionary, constant observation of negative phenomena in dictionary use and implementation of a procedure of continuous correction (Bogusławski, 1988, p. 23) seem to be viable proposals for quality assurance. Such studies may be carried out at the editorial stage, by printing the so-called sample fascicles of a dictionary and measuring their use, and at post-marketing stage, when feedback in the form of user comments and reviews reach the editorial board. New possibilities in this regard have become available with the dawn of the electronic dictionary era.

Ensuring quality at the preliminary stage is also connected with the analysis of existing dictionaries. Terminographic analysis as a procedure aiming at evaluation of TDs is a step in this direction (see e.g.: Łukasik 2007, 2010, 2012). Such studies

⁷Translation mine, M.Ł.

have long been proposed in the literature. It has been aptly summarised by Saloni (1988):

‘Considerable progress in Polish lexicography should become a long-lasting process. It is necessary to create conditions for progress, so as to see future dictionaries exhibiting ever higher accuracy of linguistic content and *answer more fully to user needs*. One means to that end are *multi-level comprehensive analyses of dictionaries*. It is hoped that the results of such analyses will be used in the compilation of new dictionaries or new editions and versions of already-existing works.’ (Saloni, 1988, pp. 8–9).^a

^aTranslation and emphases mine, M.L.

As far as dictionary content is concerned, the respective methods are already in place. On the one hand specialised text corpora can provide for the most up-to-date and accurate terminological and linguistic data, while terminological work on the vocabulary collected can help organise the content in the TD in the most appropriate manner. On the other hand one of the key elements in ensuring data reliability is applying terminological standards (norms), which should be used while deciding on the lemma list of the dictionary being compiled. This is because “quality in practical lexicography includes meticulous, goal-oriented selection of lemmata” (Bergenholtz & Tarp, 1995, p. 98), and of poor quality are “reference tools which contain wrong or inaccurate information, which lack substantial information for certain purposes, and which do not or only slightly give standardising references.” (Bergenholtz & Kaufmann, 1997, p. 121).

New dictionaries enrich the repository of existing lexicographic works, which will — at some point — be again analysed and evaluated, with the aim of putting forward new solutions to more efficient and user-friendly dictionaries. Thus, the whole procedure, extended over years, becomes a cyclic process of ensuring quality in lexicography. The following pages will focus on detailed terminographic analysis of some salient quality-bearing parameters of MTDs published in Poland between 1945 and 2013. The parameters will be evaluated against terminographic assumptions derived from theoretical studies and from the above considerations concerning the three areas defined: the user, the content and the structure.

Methodology: Terminographic Analysis for Quality Evaluation

Terminographic analysis is a dictionary study as an answer to the long-proposed systematic dictionary research (Hartmann, 2001, pp. 5–7, 27–30; Piotrowski, 1994, p. 11; Żmigrodzki, 2005, p. 16). General terminographic analysis aims at the evaluation of the state of specialised lexicography in a country within a defined time period. The preliminary research involves bibliometric studies, while comprehensive studies envisage dictionary evaluation, called detailed terminographic analysis. This latter procedure may entail the study of all terminographic works published on a given market within a defined time period according to a complete set of parameters,⁸ all terminographic works according to a subset of parameters (e.g. definition

⁸Such set may be drafted either by analysing theoretical assumptions regarding specialised dictionaries, including dictionary-making principles and dictionary typology (typology of ‘possible’ dictionaries), or defined on the basis of existing works.

type or size), a subset of terminographic works (e.g. dictionaries of a specific type or of a specific domain) according to a complete set of parameters (as applicable to such subset) or a subset of terminographic works according to a subset of parameters. Such detailed analysis of a single dictionary is the point of departure for dictionary criticism.

The study encompassed multilingual terminological dictionaries published in Poland between 1945 and 2013. One of the preliminary requirements was that the dictionaries record, among other languages, Polish and English terminology. The set of parameters has been limited so as to enable assessment of multilingual specialised lexicography.

Quality in Multilingual Dictionaries in Poland. Evaluative Analysis

I. Users' needs

Assumption 1

Terminological dictionaries should meet user's needs

To account for the user's needs, authors, editors and publishers need to take up consistent research into such needs. The study should envisage the user perspective and reveal four lexicographic profiles:

- dictionary profile (the kinds of information looked up),
- user profile (the kinds of users demanding this information),
- task profile (the kinds of activities for which the information is needed),
- skill profile (the kinds of reference skills displayed by the user).

(Hartmann, 2007, p. 46)

Such consistent scholarly approach could help choose the appropriate set of dictionary parameters, tailored to the needs of predefined user groups.

Another method of learning about dictionary quality as perceived by their users is through dictionary reviews. Theoretically, these should reflect both the lexicographic make-up, understood here as a selection of appropriate methods and structure for the dictionary functions and users' needs, and the linguistic (or in the case of specialised dictionaries — the terminological) accuracy. However, as Hartmann notes, "dictionary reviews are too superficial to tell us reliably how particular user groups would fare in the process of consulting particular dictionaries" (Hartmann, 2007, p. 48). Worse, "reviews rarely evaluate dictionaries against objective standards" (Hartmann, 2007, p. 50).

Sadly, Polish metaterminographic studies into user's needs are virtually non-existent (both in the realm of theory, and in practice),⁹ while dictionary reviews are scarce, and indeed superficial, usually limited to the criticism of a selection of entries or equivalents. In addition, dictionary reviews are traditionally published in specialist magazines, leaving general public limited access to this sort of evaluative information. Only a few dictionaries prior to 1989 (and none after 1990) mention

⁹In 1970 Polish Scientific Publishers (Wydawnictwa Naukowo-Techniczne) conducted a survey among the users of scientific and technical dictionaries released by the publishing house, the idea being to assess the usefulness of this kind of dictionaries across various user groups (Czerni, 1977, p. 34). No similar study has been taken up since 1990.

the fact that user suggestions sent as feedback to the editors had been taken into account during the compilation of the revised version of the dictionary.

However, one general observation can be made and could produce predictable assessment result, namely that most dictionaries claim to be universal (multifunctional), designed for a wide range of users: from field specialist, specialist translators, to students of a given profession and anyone interested in the subject matter. Detailed analysis of the TDs' macro-, medio- and microstructures has confirmed that most of the dictionaries studied do not meet the criteria set by the functions they declare to fulfil.

Therefore, it is necessary to emphasise that user research in Poland urgently needs theoretical consideration so as to enable multi-faceted practical studies in this area of metaterminographic investigation.

II. Data quality

Assumption 2

Terminological dictionaries should be based on corpus data

The huge role of corpora in modern linguistic studies and applications is undeniable. According to Teubert, “lexicography is the second major field where corpus linguistics not only introduced new methods, but also extended the entire scope of research” (Teubert, 2001, p. 127). Some scholars go as far as call it a revolution in lexicography (Hanks, 2012). Corpora-based terminographic work is even more important, as the high quality of the dictionary content, and therefore of the sources for the dictionary and term extraction methodology, is of primary significance due to the need for the non-distorted transfer of specialised knowledge.

Corpus revolution has undoubtedly occurred in general lexicography — it is now the preferred method used in dictionary-making, and, according to McEney, “the challenge nowadays with English dictionaries — certainly in Britain — is to find a dictionary which *has not* been produced using corpus data” (McEney, 2014, emphasis mine — M.L.).

According to the study based on the metalexigraphic information provided in the outside matter of MTDs, none of the works analysed is based on corpus¹⁰ data. This is highly surprising, not least because corpora can make the whole process of dictionary-making more objective and — in the case of modern lexicographical software — less laborious, since the programs can use the texts for extraction of a multitude of information, form excerption of terminology and confirmation of their conceptual meaning, to extraction of definition, attestation of examples or finding collocational patterns and foreign language equivalents.¹¹

Obviously, the inclusion of digitalised collections of texts as sources in the process of specialised dictionary compilation is the foremost requirement in the years to come.

¹⁰The term ‘corpus of texts’ is indeed used in prefaces or introductions to some dictionaries, but it refers to a collection of texts used as sources for the works, far from the modern meaning of corpus as an electronic collection of texts, analysed using dedicated software.

¹¹Modern software can automatically compile bilingual glossaries (Ahmad & Gillam, 2002, p. 4; Bowker, 2003, p. 60).

Assumption 3

Specialised dictionaries should be compiled following a thorough terminological study

Terminological analysis, as outlined in the theory of terminology (Lukszyn & Zmarzer, 2006, pp. 85–124), should encompass all terms in all languages to be included in the TD, since terminological systems, reflecting the conceptual systems, differ across languages. This, in turn, involves collection of text corpora in each of the languages, reconstruction of the respective terminological systems based on the corpus data, use of national and/or international terminological standards (if available and/or applicable), comparison of the terminological systems and construction of a dictionary database. This semasiological-onomasiological approach does not preclude the use of already-existing terminological systems. These, however, are rare, especially for new fields or disciplines that are highly dynamic. One has to bear in mind that in order to create a BTM or an MTM it is not possible to ‘translate’, or find equivalents, for the entry terms: such translation would require reference to some external source for equivalent-mining (often non-existent) and would lack the all-essential terminological work.¹² The metalexigraphic evaluation of such bilingualised dictionaries¹³ need not be outright negative provided that their functionality and the target users are clearly defined and limited (e.g. learners of an LSP and reception-oriented use, i.e. passive dictionary).

Few authors or editors of MTMs admit to applying terminological analyses in their works (it almost exclusively concerns terminological standards). The practice was limited to the period 1945–1989, and manifested itself in the inclusion of quantitative data on types of terms or indication of percentage share of terms of particular subfields included in the dictionary.

It goes without saying that in order to become a tool of professional knowledge transfer, TDs must be compiled with terminological requirements in mind.

Assumption 4

Terminological dictionaries should include standardized terms

According to the traditional school of terminology, the term proper is a linguistic unit that has undergone standardization by a competent body, such as a scientific committee, a national and/or international standardization agency,¹⁴ etc. (Lukszyn & Zmarzer, 2006, pp. 85–86). Standardization is the means of ensuring terminological quality, as the place of a particular concept becomes clearly defined, the term is chosen on the basis of a variety of linguistic, pragmatic and stylistic prerequisites, alongside national and international harmonisation. Such activity guarantees that the terminology included in a terminographic work becomes a reliable tool in the transfer of professional knowledge. Therefore, terminographic works of whatever kind (dictionaries, terminological databases, terminological banks, etc.) should consist of standardized terms, whenever possible. Naturally, in some areas of human

¹²It is certainly impossible for highly dynamic terminological systems, because following their publication they almost instantly become outdated.

¹³Bilingualised dictionary is a “dictionary based on a monolingual dictionary whose entries have been translated in part or in full into another language” (Hartmann, 2001, p. 170).

¹⁴In Poland: Polish Committee for Standardization (Polski Komitet Normalizacyjny, PKN), set up in 1924 and headquartered in Warsaw.

activity standardization is of highest priority, while in others is not attempted.

Recently, some scholars have undermined the traditional ideas in terminology (Temmerman 2000), presenting, as a result, a new view on standardization. For Tsakona “a standardized term is one which is well-known in a speech community, is often used in specialised publications or the media, and is also accepted by the speakers” (Tsakona, 2007, p. 138). This suggests use of quantitative data and, again, points to the necessity of using text corpora in the dictionary-compilation process.

Detailed terminographic analysis of MTDs has revealed that around 8% of TDs published in the years 1945–1989 and only about 1% of such works released between 1990 and 2013 are based in whole or in part on standardized terminology. Obviously, the major source of standardized terminology are terminological standards (terminological norms), published by standardizing agencies. There are hundreds of terminological norms already published,¹⁵ however, on account of their specific nature of being rather documents than dictionaries, they have been excluded from this analysis.¹⁶

Equally infrequent are dictionaries presenting some guidance to terminology use by indicating outdated terminology, synonymous (non-preferred) terms or directing to respective standards.

There is one drawback of applying a strict terminological rule in a TD: if a language lacks a term due to an incompatibility of the conceptual/terminological system with the systems of other languages of the dictionary, the microstructure should overtly indicate this fact, by, for example, leaving a blank gap in the space where the term should occur. Alternatively, an appropriate comment should follow.

Taking into account the data presented, it is vital to see more TDs based on terminological standards, or at least become a guide to terminology use.

III. Dictionary structure

Assumption 5

Terminological dictionaries should (ideally) cover all branches of specialised human activity

Specialised dictionaries are set to fulfil a very important role in professional communication, since they are an indispensable tool in storing, ordering and conveying professional knowledge. Therefore, the fullest coverage of all specialised fields by TDs is of utmost importance. Since professional communication is often international, BTDs and MTDs are the essential reference works in providing the terminological and linguistic assistance required by the users.

The total number of MTDs with English and Polish published in Poland between 1945 and 2013 is 417,¹⁷ with 204 TDs published between the years 1945–

¹⁵For example, in 1977 Czerni (1977, p. 29) mentions that there were about 900 terminological norms published to date (possibly since the foundation of the Polish Committee for Standardization in 1924).

¹⁶Interestingly, Polish Norms (including the terminological ones) are only applicable within the territory of Poland. If they include foreign language equivalents, these are not deemed normative and are presented for reference purposes.

¹⁷The data are based on author’s own terminographical database. On account of the fact that

1989¹⁸ (45-year period; 4.5 dictionaries annually), and 213 TDs released in the period 1990–2013 (24-year period; 9 dictionaries annually). The rise in the number of multilingual works is consistent with the *terminographical boom*, i.e. a sudden increase in the number of dictionaries starting in 1990, and continuing till 2005 (Łukasik, 2007, p. 27).

The assessment of specialised fields coverage by TDs is possible upon detailed terminographic analysis of the content of each work. Some interesting facts emerge from detailed data. For illustration purposes, all MTDs were assigned to one of the four ‘thematic’ groups: SCIENTIFIC-TECHNICAL, LEGAL-POLITICAL, ECONOMIC and OTHER.¹⁹ Table 1 presents the percentage breakdown of TDs of different thematic fields.

Table 1: Percentage of MTDs across thematic groups.

	SCIENTIFIC-TECHNICAL	LEGAL-POLITICAL	ECONOMIC	OTHER
1945–1989	78%	1%	3%	18%
1990–2013	61%	26%	9%	4%

Some general conclusions can be drawn on the basis of the above data. Firstly, the dominant position of scientific-technical dictionaries comes as no surprise, considering the number of scientific and technical fields of knowledge and practical activity. The observed drop in the share of dictionaries from this group after 1989 can be attributed to three factors: 1. the recognition of users’ needs in other areas; 2. the dominance of English as the language of science and technology, leading to a much greater number of bilingual English-Polish dictionaries, both uni- and bidirectional, compared to the number of multilingual works released in the same period; 3. the high cost of the laborious editorial work on such dictionaries. Another factor observed recently is rise in attractiveness of online reference works, including online translators, such as Google Translate, which — besides full sentences and paragraphs — can translate terminology (and so can act as a multilingual dictionary). Prior to 1989 centrally-directed publishing planning led to a more focussed terminographical work, leading to some successful international projects on MTDs (Czerni, 1977, pp. 29–30).

Considering the rise in the number of legal-political and economic dictionaries since 1990, it is imperative to realise that it was not the fact that these domains were not popular with users before 1989; possibly they were meant to stay unpopular. Law, politics and economics were the areas reserved for a closed circle of

library catalogues as well as library collections may have been incomplete, the precise number of dictionaries may be difficult to calculate and may be different from the figure presented in this paper.

¹⁸Division of the entire temporal extent of the study into two periods, with the year 1989 as a landmark upon the socio-economic changes that took part in Poland and an observation that free market economy has had a significant impact on publishing market, possibly marking a new era in Polish lexicography.

¹⁹The OTHER group comprises all dictionaries that could not be assigned to any of the three previous groups, and included dictionaries of art, humanities, social sciences, etc. The division is strictly technical in nature, based on simple statistical data, and does not imply clear-cut thematic divisions between individual dictionaries.

individuals. A TD for masses in these fields was basically unnecessary. Since 1989 publishers have been trying to satisfy users' needs: the new reality in Poland had to be explained, hence the rise in popularity of such topics in terminographic works, mainly in the field of the European Union and capitalism-related domains. New political and economic ties are also reflected in the languages included in multilingual works (see below).

Unfortunately, the number of MTDs belonging to the fourth group (OTHER) has dropped significantly in recent years. In the pre-1989 era TDs generally represented terminologies of a greater number of disciplines. Among the most frequently covered fields in this group were linguistics, sociology, library science, pedagogics and sports. An effort worth mentioning here is the 1955 *Dictionary of sports*, published in 22 volumes, each dedicated to a different sport discipline, presenting the terminology in five languages with their phonetic transcription²⁰ (*Słownik sportowy*, Warszawa, 1955). Small as the volumes were (usually ca. 300 entries each), the dictionary stands out as it had been prepared for one sport event: The II International Youth Olympic Games²¹ held in Warsaw and organised by the World Federation of Democratic Youth during the 5th World Festival of Youth and Students (August 1955). Other fields covered by MTDs are art restoration, literary analysis, archive studies, horse riding, fishing, and bee-keeping.

Among the domains included in the MTDs in the 1990–2013 period in this thematic section the most frequent were translation studies, language teaching, pedagogics, sociology, religious studies as well as individual volumes covering historical studies, music studies, theatre studies, regional studies, education and gardening.

Large numbers notwithstanding, there are still several specialist branches whose terms have not been included in any BTD or MTD of whatever type. Among the domains are art and design, astronomy, biochemistry, biocybernetics, bioengineering, biophysics, cognitive studies, culturology, dance, ethnology, geophysics, history of arts, materials science, philosophy, science of machines, neurobiology, etc. (Łukasik, 2010, p. 198).

Considering the degree of coverage of individual fields, it is necessary to emphasise that detailed study in this regard was not carried out, since it would require the compilation of separate narrow-field specialised corpora for each of the branches (fields, domains) included in the dictionary to quantify the parameter. Assuming, however, that the title of the dictionary reflects its content, most of the MTDs analysed were domain-specific works, i.e. covering one unique field. Taking the number of terms into account (see Table 2) and the theoretical assumption that a terminological lexicon of a field consists of a few thousand terms, it can be concluded that around half of the dictionaries surveyed meet the criterion of optimal coverage.

²⁰With the use of non-standard transcription system.

²¹The name, cited after the dictionary, is not used elsewhere.

Table 2: Percentage of MTDs across size categories.

No. of terms / Period	1945–1989	1990–2013
1–1000	44%	51.5%
1,000–10,000	48%	44.5%
10,000–40,000	8%	4%
40,000–100,000	0%	0%
100,000+	0%	0%

Assumption 6

MTDs should include most significant world languages

On account of their role in international professional communication, MTDs ought to present terminology in so-called world (or conference) languages. Results of terminographic analyses are summarised in tables below.

Table 3: The number of languages in MTDs.

No. of lang.	3	4	5	6	7	8	9	10	11	12	14
1945–1989	18%	16%	26%	24%	5%	5%	3.5%	1%	0.5%	0.5%	0.5%
1990–2013	21%	35.5%	29%	8%	2%	2%	0%	0.5%	1%	0%	0%

Table 4: Languages in MTDs published in the period 1945–1989.²²

Lang.	No. of TD	Lang.	No. of TD	Lang.	No. of TD	Lang.	No. of TD
Bulgarian	6	Greek	1	Latvian	1	Serb-Croat.	2
Czech	23	Spanish	29	Mongolian	3	Slovak	9
Danish	1	Dutch	10	German	154	Slovenian	1
Esperanto	2	Japanese	1	Portuguese	1	Swedish	11
Estonian	1	Lithuanian	1	Russian	163	Hungarian	37
French	154	Latin	17	Romanian	5	Italian	19

Table 5: Languages in MTDs published in the period 1990–2013.

Lang.	No. of TD	Lang.	No. of TD	Lang.	No. of TD	Lang.	No. of TD
Arab	1	Spanish	19	Russian	99	Turkish	1
Czech	7	Latin	13	Romanian	1	Ukrainian	3
Danish	1	Dutch	4	Slovak	5	Hungarian	3
French	142	German	169	Slovenian	1	Italian	22
Greek	1	Portuguese	3	Swedish	3		

The data presented above seem to reflect the political situation of Poland before and after 1989. The dominance of Russian in the post-war Poland is clearly recognisable and easily explained, along with a higher number of dictionaries including

²²English and Polish are included in all MTDs analysed (see explanation and figures in the preceding paragraphs).

languages of countries under Soviet influence. During that period some Polish authors/editors go as far as adding Russian to already existing multilingual works. After the political and economic transformation, Russian declines in importance, while MTDs include mostly German and French, the latter to account for the official languages of some European institutions. Clearly, however, it is English that has dominated bi- nad multilingual terminography since 1945.

In view of the languages included, it has to be admitted that in periods studied the MTDs met the requirement of covering the most significant world languages. However, an in-depth analysis of usefulness of such works (see user research above) in maintaining an uninterrupted flow or processional knowledge across languages is necessary to warrant a more thorough assessment.

Assumption 7

Specialised dictionaries should include a list of sources (references, bibliography)

Bibliography plays a very similar role in both terminological databases and specialised dictionaries, as it is supposed to confirm the origin of terminology (Felber & Budin, 1994, p. 183), definition or other data included in the dictionary. Hence, bibliography serves as a quality litmus paper. Its role however, spans beyond, since it is also used for evaluating the up-to-dateness of the content and for demonstrating the originality of the work in question.

In the years 1945–1989 almost a quarter, while between 1990 and 2013 almost a third of all MTDs analysed included bibliography, usually as a separate part within the front or back matter, or as a reference list within individual entries or in the preface/introduction. Most of the TDs have not met the requirement, which may indicate either a huge number of works to be cited or reluctance to name the sources for some unclear reason.²³

Assumption 8

Terminological dictionaries should present the material in a non-alphabetical order, most desirably in the form of a terminological thesaurus

Specialists in terminology and terminography have emphasised that the most desired way to present terminology is in a non-alphabetical way, and more precisely, in a systematic²⁴ manner. Felber and Budin emphasise that the most important kind of a collection of terminological data is a branch-specific specialist dictionary in a systematic arrangement and with definitions (Felber & Budin, 1994, p. 180). This contention is based on the assumption that human mental lexicon is not arranged alphabetically, but rather semantically (conceptually), and, therefore, a dictionary as a representation of the mental lexicon should mimic its structure (see Michta 2014, pp. 191–192). Moreover, Felber and Budin claim that conceptual macrostructure is used in TDs because the alphabetic arrangement has failed to fulfil its role

²³This might well be plagiarism, as has been seen in some dictionaries (see Łukasik, 2010, p. 189).

²⁴'Systematic' is often understood broadly, and includes any kind of onomasiological approach to presentation of terminology. Therefore this general notion subsumes some derivative (or synonymous) notions, for example: thematic, systematic, thesaurus-like, ideographic, etc.

in such works (Felber & Budin, 1994, p. 171). However, the data obtained from detailed terminographic analysis seem to contradict this observation: the majority of MTDs present terminology in an alphabetic order, with the respective percentages for the periods 1945–1989 and 1990–2013 being 79% and 91%. One of the TD type proposed to be best suited for specialised knowledge representation is the terminological thesaurus. Terminological thesaurus is a dictionary that overtly reveals semantic relations between terms using specially-designed meta-language (Lukszyn & Zmarzer, 2006, pp. 157–159). Yet, there have been only a few terminological thesauri published in the period of almost 70 years (1945–1989 — 1%; 1990–2013 — 7%²⁵).

The overwhelming popularity of alphabetical order can be associated with users' needs, or rather habits. This is where user skill profile (see above) might have played a role: almost all users can almost mechanically evoke and apply alphabetical order (Bańko, 1988, p. 57), whereas conceptual ordering might be unintelligible for most. Similarly, compiling a thematically-ordered or onomasiological dictionary, for example a thesaurus, might be too expensive to venture, and might remain difficult to navigate through. The ordering and choice of semantic relations to be revealed might be regarded as subjective, compared to the all-formal alphabetical order.

Assumption 9

Terminological dictionaries proper should explicate concepts represented by the terms

According to Lew, user research suggests that one dictionary consultation that clearly dominates is the meaning (Lew, 2010, p. 291). It goes without saying that to meet this primary need of dictionary users, some form of explication of a concept should be offered. In rare cases the foreign-language equivalent can substitute for a definition, yet only in fields of science or technology whose conceptual systems in different natural languages overlap to a great extent. In the case of culture-dependent terminologies it is certainly impossible, and requires definition, ideally in the form of a comparative description of the subject matter (Bergenholtz & Tarp, 1995, p. 61). Besides, definition is the obligatory element of TDs according to a traditional view on terminology (see above).

The concept is in fact the meaning of the term, so definition (or description) should list as many distinctive features of the former as is required to differentiate it from other concepts of the same field and confirm its place in the conceptual system.²⁶ Simultaneously, the latter requires some linguistic guidance, including the pragmatic aspect (e.g. usage comments, examples) and stylistic norm explanation.

In the case of MTDs definition is offered in only 41% of all works analysed.²⁷ This fact certainly negatively influences the quality assessment undertaken, on the grounds that the term is lacking essential information. In everyday practice, these

²⁵This figure includes 20 volumes of *Mikrotezaurus* series, authored by E. Chmielewska-Gorczyca and released by Sejm Publishing House.

²⁶This can be achieved in an overt manner, as in the case of systematic dictionaries, such as the thesaurus (see above).

²⁷Equal share for each period.

are translators and students who would benefit most from the inclusion of some form of meaning explanation and/or disambiguation in a TD.

Assumption 10

Multilingual terminological dictionaries must include language indexes

Multilingual dictionaries are supposed to include alphabetical indexes in all languages of the equivalents, and in the case of a systematic (thematic) arrangement of entries in such a dictionary — also in the source language (Czerni, 1977, pp. 45–46; Felber & Budin, 1994, p. 181). Indexes are supposed to enhance the function of the dictionary, enabling searches (translation) between all languages incorporated/²⁸

The percentage of MTDs containing language indexes is similar in the two periods analysed, i.e. 72% and 70% for 1945–1989 and 1990–2013, respectively.

The assessment of the lack of indexes does not need to be outright negative, as the function of the dictionary might be limited to production in languages other than the source language of the dictionary, to standardisation of terminology and to reception of Polish texts by foreign-language speakers. Few, if any, of the dictionaries analysed mention this function, and, instead, the universal nature of such works is overwhelmingly emphasised. Indexes are also unnecessary in MTDs with specific macrostructures, usually composed of a number of individual dictionaries, each time with a different source language. Alternatively, a word list might be composed of all lemmata in all languages of a MTD at the same time, with target language equivalents presented next to the headwords.

Concluding Remarks

The emerging picture of multilingual specialised dictionary-making has lots of flaws and scratches. However, by applying some measures quality of specialised dictionaries can be largely improved. Most of the instruments are already available, some still require development. One of the greatest changes will involve regular incorporation of specialised corpora in terminographer's workshop; the other will be introduction of systematic user research. More attention should also be paid to dictionary content, since TDs are meant to be infallible carriers of specialised knowledge. All these elements would effect in a set of parameters tailored to the needs of users and compatible with theoretical assumptions.

One idea of improving the quality of specialised dictionaries is to apply multi-modal approach to dictionary making (Lew, 2010, p. 303). This, however, implies the electronic form of the dictionary, a commodity still rare in Polish terminography. Such elements as audio recordings for lemma words, foreign language equivalents in bi- or multilingual dictionaries, in-built real-time search of specialised corpora (examples, collocations), video recordings, pictures and photographs could become a viable option in modern terminographic works of today.

²⁸A two-step procedure in case of searches between languages of the equivalents.

References

- Ahmad, K. & Gillam, L. (2002). Sharing the knowledge of experts. *Fachsprache*, 24(1–2), 1–19.
- Bańko, M. (1988). Porządek alfabetyczny jako narzędzie leksykografa. In Z. Saloni (Ed.), *Studia z polskiej leksykografii współczesnej* (Vol. 2, pp. 57–72). Białystok: Dział Wydawnictw Filii UW.
- Bańko, M. (2001). *Z pogranicza leksykografii i językoznawstwa*. Warszawa: Wydział Polonistyki UW.
- Bergenholtz, H. & Kaufmann, U. (1997). Terminography and lexicography: A critical survey of dictionaries from a single field. *Hermes — Journal of Linguistics*, (18), 91–125.
- Bergenholtz, H. & Tarp, S. (1995). *Manual of specialised lexicography*. Amsterdam: John Benjamins.
- Bogusławski, A. (1988). Dwujęzyczny słownik ogólny: Projekt instrukcji z komentarzami. In Z. Saloni (Ed.), *Studia z polskiej leksykografii współczesnej* (Vol. 1, pp. 19–65). Wrocław: Zakład Narodowy im. Ossolińskich, Wydawnictwo PAN.
- Bowker, L. (2003). Terminology tools for translators. In H. Somers (Ed.), *Computers and translation: A translator's guide*. Amsterdam: John Benjamins Publishing Company.
- Czerni, S. (1977). *Słowniki specjalistyczne*. Warszawa: Wydawnictwa Naukowo-Techniczne.
- Felber, H. & Budin, G. (1994). *Teoria i praktyka terminologii*. Warszawa: Wydawnictwa Uniwersytetu Warszawskiego.
- Gajda, S. (1990). *Wprowadzenie do teorii terminu*. Opole: Wyższa Szkoła Pedagogiczna.
- Hanks, P. (2012). The corpus revolution in lexicography. *International Journal of Lexicography*, 25(4), 398–436. <http://doi.org/10.1093/ijl/ecs026>
- Hartmann, R. R. K. (2001). *Teaching and researching lexicography*. Harlow: Pearson Education Limited.
- Hartmann, R. R. K. (2007). *Interlingual lexicography: Selected essays on translation equivalence, contrastive linguistics, and the bilingual dictionary*. Tuebingen: M. Niemeyer. (*Lexicographica Series Maior*, 133)
- Lew, R. (2010). Multimodal lexicography: The representation of meaning in electronic dictionaries. *Lexicos*, (20), 290–306.
- Łukasik, M. (2007). *Angielsko-polskie i polsko-angielskie słowniki specjalistyczne (1990–2006): Analiza terminograficzna*. Warszawa: Katedra Języków Specjalistycznych UW.
- Łukasik, M. (2010). *Teksty specjalistyczne a konstruowanie terminograficzne* (Unpublished PhD thesis). Wydział Lingwistyki Stosowanej UW, Warszawa.
- Łukasik, M. (2012). Terminological dictionary as a comprehensive cognitive and linguistic tool. *Language in Different Contexts: Research papers*, 5(1), 98–108.
- Łukasik, M. (2014). Zasady i narzędzia porządkowania terminograficznego. In T. Michta (Ed.), *Narzędzia pracy lingwistycznej* (pp. 140–170). Warszawa: Instytut Rusycystyki UW.
- Lukszyn, J. (Ed.) (2005). *Języki specjalistyczne: Słownik terminologii przedmiotowej*. Warszawa: Katedra Języków Specjalistycznych UW.
- Lukszyn, J. & Zmarzer, W. (2006). *Teoretyczne podstawy terminologii*. Warszawa: Katedra Języków Specjalistycznych UW.
- McEnery, T. (2014). *Corpus linguistics: method, analysis, interpretation* (An online corpus-linguistics course). Retrieved 24 December 2014, from <http://www.futurelearn.com>

- Michta, T. (2014). Słownik jako model wiedzy. In T. Michta (Ed.), *Narzędzia pracy lingwistycznej* (pp. 171–198). Warszawa: Instytut Rusycystyki, Wydział Lingwistyki Stosowanej UW.
- Oxford Dictionaries. (2014). Retrieved 28 December 2014, from <http://www.oxforddictionaries.com>
- Piotrowski, T. (1994). *Problems in bilingual lexicography*. Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego.
- Saloni, Z. (Ed.). (1988). *Studia z polskiej leksykografii współczesnej*, Vol. 1. Białystok: Dział Wydawnictw Filii UW.
- Temmerman, R. (2000). *Towards new ways of terminology description: A sociocognitive approach*. Amsterdam: John Benjamins.
- Teubert, W. (2001). Corpus linguistics and lexicography. *International Journal of Corpus Linguistics*, 6(1), 125–153. <http://doi.org/10.1075/ijcl.6.3.11teu>
- Tsakona, V. (2007). Bilingualisation in practice: Terminological issues in bilingualising a specialised glossary. *International Journal of Lexicography*, 20(2), 119–145. <http://doi.org/10.1093/ijl/ecm008>
- Żmigrodzki, P. (2005). *Wprowadzenie do leksykografii polskiej*. Katowice: Wydawnictwo Uniwersytetu Śląskiego.

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