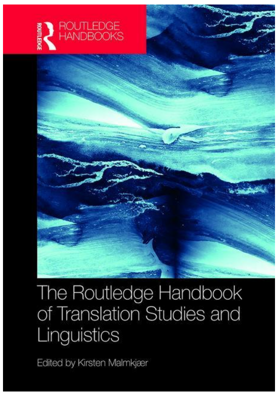

The Routledge Handbook of Translation Studies and Linguistics

Kirsten Malmkjær

Translation, interpreting and lexicography

Publication details
https://test.routledgehandbooks.com/doi/10.4324/9781315692845-27
Helle V. Dam, Sven Tarp
Published online on: 18 Dec 2017

26

Translation, interpreting and lexicography

Helle V. Dam and Sven Tarp

Introduction

Translation, interpreting and lexicography represent three separate areas of human activity, each with its own theories, models and methods and, hence, with its own disciplinary underpinnings. At the same time, all three disciplines are characterised by a marked interdisciplinary dimension in the sense that their practice fields are typically "about something else". Translators may, for example, be called upon to translate medical texts, and interpreters may be assigned to work on medical speeches. Similarly, practical lexicography may produce medical dictionaries. In this perspective, the three disciplines frequently come into contact with each other.

This chapter discusses and explores some of the basic aspects of this interrelationship, focusing on the (potential) contribution of lexicography to translation and interpreting and on explaining the basic concepts and methods of the former discipline to the translation and interpreting readership of the present volume.

As we shall show, the relationship between (written) translation and lexicography is strong and well established, whereas the link between interpreting and lexicography is much weaker. With present-day, technology-based lexicographical tools, all three fields, interpreting and lexicography in particular, would have much to gain from closer interaction.

Lexicography and information needs

Lexicography is the discipline that deals with the theory and practice of dictionaries and other reference works. Dictionaries have been designed with many different titles and purposes. They have been produced for more than four thousand years and have been available on clay, papyrus, paper and the digital media. During this long span of time, they have covered almost all languages and areas of human activity and thinking.

The common fundamental characteristic of all these very different works is that they are tools designed to meet a specific category of human needs, namely information needs (Wiegand 1987, 2000). The needs that can be satisfied by lexicographical works may arise in many different social contexts and situations. According to the function theory of lexicography, these needs are always shaped by the specific type of situation where they arise as well as by the characteristics of the person who experiences them in this situation (Tarp 2008, 80–88).

There are various types of situation that are relevant to lexicography. Of these, the two most important, and the ones related to translation and interpreting, are the communicative and the cognitive situations. The former is defined as a situation where a person engaged in the production, reception, translation (and, potentially, interpreting) or revision of texts experiences a problem that disturbs the communication process. A cognitive situation is defined as a situation where a person, for one reason or another, experiences the need to get new or additional knowledge about a specific subject. The corresponding information needs are called "communicative" and "cognitive" needs, respectively (Fuertes-Olivera and Tarp 2014, 48–57).

Nesi (2015, 584) expresses the same idea in the following way: "People typically consult maps, encyclopedias, and dictionaries while they are doing something else". This being the case, users of dictionaries will expect the lexicographical consultation to be finished as quickly and smoothly as possible so that they can return to and continue the "something else" they were doing when their specific information need occurred. As such, the time factor is an important criterion of quality in lexicographical works. If the consultation takes too long, it steals time from the user's main activity. Hence, theoretical lexicography does not only deal with dictionary consultation in the narrow sense of the word, but also with the phases taking place immediately before and after this consultation, as we shall see below.

Transition to the digital media

The decades around the turn of the 21st century saw the rapid transition from printed to digital dictionaries. This development was triggered by the introduction of new disruptive computer and information technologies into lexicography. Today, most dictionaries are published online and can be accessed almost anywhere on earth by means of a variety of devices like laptops, tablets and smartphones. Lexicographical data are now stored in remote databases from which they can be retrieved and presented to dictionary users in real time.

The new technologies and techniques have opened completely new horizons to lexicography. While printed dictionaries provided static articles with static data to their users, the most advanced digital dictionaries now offer dynamic articles with dynamic data, i.e. articles and data that vary from consultation to consultation. This allows for a much more user-adapted and personalised lexicographical product.

Although the concepts of database and dictionary are sometimes mixed up, they are two very different things (Bergenholtz and Nielsen 2013). In fact, one lexicographical database may feed two or more dictionaries and is, as such, exclusively a tool for data storage. Dictionary users do not have direct access to the data stored in the database; they only have indirect access by means of the user interface. The interface is what the users see on the screen. Here, the data addressed to a specific lemma (headword) are structured in the most convenient way. However, not necessarily all data addressed to a given lemma in the database are presented to the user in each consultation. If appropriate information techniques – e.g. data filtering and user identification – are applied, it is possible to visualise only the types and amount of data considered relevant in each case (Bothma 2011).

The data stored in a lexicographical database may be available through various user interfaces which represent either one dictionary with various functions or a number of different dictionaries, each of them with their respective functions. However, even the best-designed user interfaces cannot solve all problems by themselves. Their quality also depends on the design of the underlying database, which should be structured in such a way that each piece of data which may later be displayed separately is given its own number and assigned to its own field with defined relations to other relevant data fields. This makes it possible to retrieve any specific collection of data from the database and present it on the screen in the most user-friendly way (Tarp 2015b). Hence, if both the database and the corresponding user interfaces are well designed, the resulting lexicographical tool will be able to adapt the visualised data to users' specific needs when they experience problems in connection with specific activities such as writing, reading, translating, interpreting or revising texts.

An example of a modern information tool which provides such a differentiated service to its users is the online *Diccionarios de Contabilidad* (Fuertes-Olivera *et al.* 2015), a series of interconnected monolingual and bilingual accounting dictionaries.

This set of dictionaries has various functions; the fundamental one is to provide assistance in connection with the translation of accounting texts. It consists of three main dictionaries (Spanish, Spanish–English and English–Spanish), each with various search options which give access to lexicographical data specifically adapted to different types of information needs. If the user selects the Spanish dictionary, writes a term in the search field and clicks the button "*recepción*" (reception), an article like the one shown in Figure 26.1 will appear on the screen. If one of the other buttons is activated, a completely different article will be displayed. Dictionaries following these basic principles are especially helpful for translators and interpreters with specific information needs related to their profession.

Lexicography and its relation to translation and interpreting

In the mutual relation between translation, interpreting and lexicography, the two former represent the main activity in which translators and interpreters are engaged, whereas the consultation of dictionaries is a secondary activity which is only relevant to the users when they experience information needs during the translation or interpreting process. As such, lexicography is an auxiliary discipline vis-à-vis translation and interpreting.

The task of theoretical lexicography in its relation to translation and interpreting is first of all to study these activities and separate the phases and sub-phases where lexicographically relevant needs may occur, i.e. information needs which can be solved by dictionary consultation. The aim of this endeavour is to determine the lexicographical data that should be selected, prepared and incorporated into the dictionary in order to meet these needs.

Both translation and interpreting studies have developed models that describe the various phases or sub-phases of the respective activities. These models constitute an important source of inspiration for lexicography when studying translation and interpreting, but they cannot be accepted uncritically. Only the phases and sub-phases where information needs that (which can be solved by means of dictionaries) occur are relevant to lexicography. Other phases, sub-phases and needs are lexicographically irrelevant. Translation and interpreting models developed in a lexicographical perspective will therefore to a certain extent differ from those produced within the other two disciplines, as shown in the following sections.

Translation in a lexicographical perspective

There is an extensive academic literature on dictionaries and (written) translation, including a large number of articles and books, among them Snell-Hornby and Pöhl (1989), Piotrowski (1994), Atkins (1998), Sin-wai (2004), Yong and Peng (2007) and Fata (2009). To these

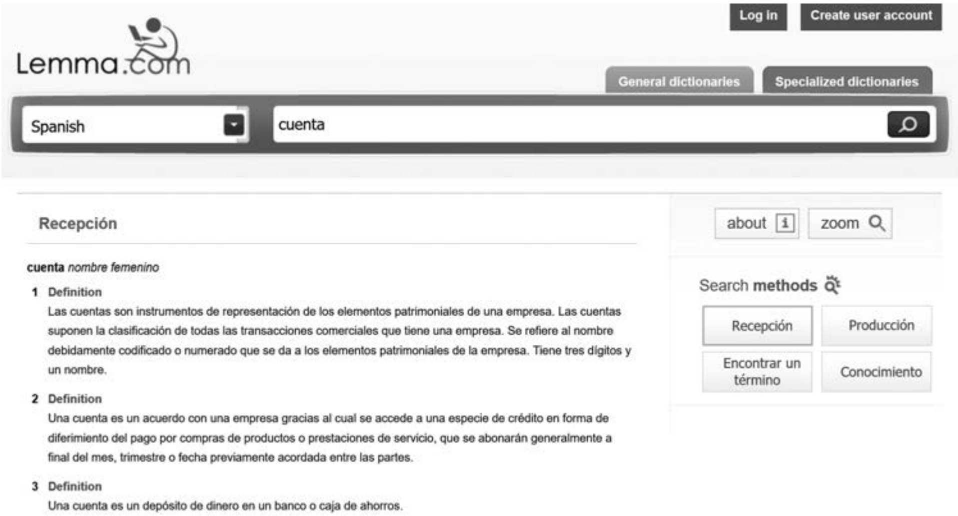

Figure 26.1 Article from *Diccionarios de Contabilidad* – Spanish

can be added thematic issues of specialised journals like *Lexicographica* 29 (2013) and *MonTi* 6 (2014).

Many lexicographers, such as Hartmann and James (2001), Marello (2003) and Adamska-Sałaciak (Forthcoming), refer translation problems to bilingual dictionaries without discussing other options. Burkhanov (1998) even defines a translation dictionary as bilingual (or plurilingual). Only a few authors like Tomaszczyk (1989) and Tarp (2013) discuss the relation between lexicography and translation in a more complex manner, discrediting the myth that translation dictionaries are more or less synonymous with bilingual dictionaries.

Most literature deals exclusively with translation for general purposes, and the lexicographical literature on specialised (LSP) translation is relatively scarce. Bergenholtz and Tarp (1995), Fata (2009), Fuertes-Olivera (2013) and Nielsen (2013) are among the relatively few lexicographers who discuss the assistance which dictionaries might provide to LSP translation.

As to the dialogue between lexicography and translation, the state of the art is summed up by Calvo Rigual and Calvi (2014, 42):

> Interest in the sister discipline is evidenced in a number of ways, both from qualitative and quantitative perspectives. Lexicographers have shown concern for meeting translators' needs in the best way possible. Translators have often regretted how inappropriate lexicographical resources are for their needs, but have failed to provide specific suggestions for improvement to lexicographers. A fluent dialogue between the two parties, undoubtedly doomed to understand each other, has been missing. In this sense, it is important to highlight that lexicographers have traditionally been more interested in doing so.

The general picture drawn by the two scholars is very precise. The lack of fluent dialogue between the two "sister disciplines" of lexicography and translation is not particularly surprising, inasmuch as we are dealing with two different disciplines, each with its own superstructure of theories, methods and models that cannot be transferred from one field to the other without first being submitted to an analysis in order to determine what can be used as it is, what can be used only after being modified and what has to be rejected. With these methodological principles in mind, Tarp (2013) has analysed the LSP translation process and identified three main phases and a number of *compulsory or optional* sub-phases where different types of need relevant to lexicography may occur. The following model shows these phases and sub-phases:

Schema 1: Translation model in a lexicographical perspective

1. The pre-translation, or preparation, phase where the translator *may*
   a. read the text to be translated in order to get a general idea of what it is about
   b. study relevant background material in order to get a general idea of the subject field in question
2. The translation phase (in the narrow sense of the word) where the translator
   a. reads selected text segments in the source language
   b. transfers text segments from the source language to the target language
   c. reproduces text segments in the target language
3. The post-translation, or revision, phase where the translator (or another person revising the text) *may*
   a. read the source-language text
   b. read the target-language text
   c. evaluate the text transfer
   d. evaluate the target-language text
   e. correct the target-language text.

The above model has been developed applying the method of deduction and relating it to the usage of dictionaries. Whenever one phase requires different types of lexicographical solution, it has been divided into two or more sub-phases. Furthermore, the model draws on findings from available user research in lexicography, e.g. Tomaszczyk (1989), Mackintosh (1998), Varantola (1998) and Nord (2002). These findings provide empirical evidence to support the sub-phases shown except for those belonging to the revision phase, for which no known user research has been conducted from a lexicographical perspective. The model nevertheless assumes that this post-translation phase consists of a number of compulsory and optional sub-phases as indicated.

It is a matter of course that the phases and sub-phases may vary from translator to translator, and from task to task. Some of the sub-phases may be omitted, repeated or their order may be reversed as the process is not necessarily linear. Contrary to most models developed within Translation Studies, Phase 2 encompasses a distinction between text transfer and text reproduction. The reason is that these two sub-phases require differentiated lexicographical treatment. Frequently, translators do not experience any problems when reading or transferring a text segment, but only when it comes to reproducing it in the target language, especially when this is not their native language.

Lexicographical assistance to translation

In all the phases and sub-phases shown in Schema 1, translators may experience various types of information need which require specific types of lexicographical solutions and data.

The needs may be either cognitive when it is a question of requiring background knowledge, or communicative when it is a question of reading, transferring, reproducing and revising the text. From a theoretical perspective, it is not important how frequent each type of need is, as dictionaries should cater for all relevant types of needs arising during the translation process, including those occurring only rarely. The following model of information needs which may appear in the different translation phases has been developed with this in mind:

Schema 2: Possible information needs during the translation process

1. In the pre-translation phase, translators may need
   a. general background information on the subject field or part of the subject field relevant to the task
   b. definitions of specific source-language terms, words and fixed expressions in order to understand the text to be translated
2. In the translation phase, translators may need
   a. definitions of source-language terms, words and fixed expressions in order to understand the source-language text
   b. equivalents of terms, words, collocations and fixed expressions in order to transfer the text
   c. information about meaning, orthography, gender, inflection, collocations, syntactic properties, word formation and genre conventions in the target language in order to reproduce the text in this language
3. In the post-translation phase, translators or other persons in charge of text revision may need
   a. definitions in both languages in order to understand specific terms, words and fixed expressions or ensure that these are correct
   b. equivalents in order to evaluate the text transfer
   c. information about orthography, gender, inflection, collocations, syntactic properties, word formation, fixed expressions and genre conventions in the target language in order to evaluate and correct the translated text.

One notes that some of the specific information needs, e.g. definitions of source-language terms, are common to two or even three different sub-phases as they were defined in Schema 1. In addition, in all three main phases translators may also need specific background information about specific phenomena, processes and things treated in the text, i.e. information that goes beyond what can be retrieved from traditional definitions. Such background information may be necessary in order to handle specific text passages.

Tarp (2013) has shown how the satisfaction of all these complex needs requires a combination of lexicographical solutions. In fact, a bilingual solution is only compulsory when it is a question of furnishing equivalents, whereas this solution is optional for the remaining data categories. Background information and definitions of source-language terms, etc. could also be furnished in a monolingual solution in this language (best solution when it is the translator's mother tongue). Definitions of target-language terms, etc., as well as data on target-language grammar, collocations, genre conventions, etc. could be provided either in a monolingual solution in the target language (best solution when it is the translator's mother tongue) or in a bilingual one based on this language (best solution when it is not the translator's mother tongue).

If a dictionary is supposed to give real assistance to translators of specialised texts, it should not only incorporate the relevant lexicographical data but also guarantee the easiest possible access to these data as well as their treatment in the most convenient language. In this respect, and based upon the above reflections, *the best overall design* of a dictionary conceived to assist its users in *L1–L2* translation of specialised texts consists of three components:

- a monolingual L1 component
- a bilingual L1–L2 component
- a bilingual L2–L1 component

Similarly, *the best overall design* of a dictionary conceived to assist its users in *L2–L1* translation of specialised texts consists of two components, both of them shared with the dictionary for L1–L2 translation:

- a bilingual L2–L1 component
- a monolingual L1 component

The integration of these three components into one and the same printed dictionary create a number of collateral problems such as the risk of data overload and the need to make additional look-ups in other parts of the dictionary in order to find the required data. These problems may obstruct the consultation process as well as the proper retrieval of the required information. They are inevitable in printed dictionaries but can be avoided in digital dictionaries if appropriate information techniques such as data filtering are used.

An example of a specialised dictionary project which consists of the three components mentioned above and uses relevant information techniques is the online *Diccionarios de Contabilidad* discussed above. The article *cuenta* shown in Figure 26.1 was retrieved from the database using the search method "*recepción*" in the Spanish dictionary. If the user instead chooses the Spanish–English dictionary and clicks the button "*Frases y Expresiones*", a completely different article will be visualised as shown in Figure 26.2.

When fully displayed, the article reproduced in Figure 26.2 contains a total of 50 Spanish phrases and expressions that include the term *cuenta*. A click on any of them will bring the user to the corresponding Spanish–English article where an English translation can be found. The practical experience from a similar Danish–English project (Nielsen, Mourier and Bergenholtz 2015) has shown that professional translators of accounting texts find this particular type of article very useful to their activity.

As to the need for background information indicated above, some specialised dictionaries do in fact offer this kind of information following a long, but relatively unknown tradition going back to the European Enlightenment Era. The French encyclopedist D'Alembert (1754, 958) called them "dictionaries of things". Apart from extensive definitions of terms, they sometimes contain special sections where the reader can get a quick overview of the subject matter treated in them (Bergenholtz and Nielsen 2006).

A recent example of a dictionary of this kind is the English–Spanish *Encyclopedic Dictionary of Gene Technology* (Kaufmann and Bergenholtz 1998), which contains a 43-page systematic introduction to molecular biology structured in 30 thematic paragraphs, each of which can be accessed separately either by means of the index or following cross-references from selected dictionary articles. Apart from offering general information about the subject field, this introduction allows the translator to become acquainted with the basic terminology used within this particular discipline.

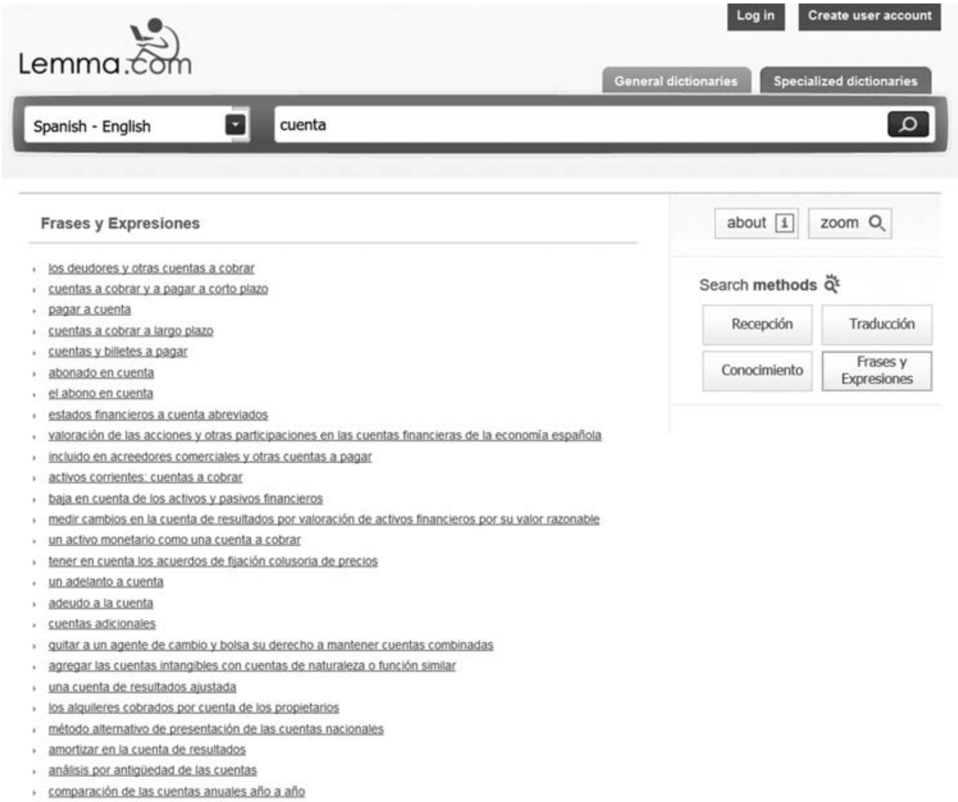

Figure 26.2 Article from *Diccionarios de Contabilidad* – Spanish–English

Alternatively, the dictionary can refer the translator to already-existing texts placed on the internet. Various specialised online dictionaries provide external hyperlinks to carefully selected webpages where the translator may obtain relevant and reliable background information. If well prepared, such hyperlinks to reliable sources may facilitate the translator's job and contribute to reducing the total time employed in the information search process.

Unfortunately, the global picture shows that there are still relatively few dictionaries that follow the above principles and pay attention to all relevant information needs which a translator may experience during the whole translation process from the preparation phase to the revision phase. For instance, dictionaries designed to solve communicative needs and those conceived to meet cognitive needs have tended to develop along separate lines with no or little overlap (Tarp 2015a).

If no well-conceived set of dictionaries is available in connection with a specific translation task, the translator typically has to resort to a variety of different lexicographical and non-lexicographical information sources, as has been documented by Nord (2002), among others. Consultation of these sources, which also include human experts, may eventually solve the translator's information needs, but the process tends to be much more time-consuming than if everything could be solved by consulting only one set of dictionaries as described above. In this sense, it is understandable that translators – as claimed by Calvo Rigual and Calvi (2014, 42) – sometimes regret "how inappropriate lexicographical resources are for their needs".

Interpreting in a lexicographical perspective

As we have seen, there is a close and well-established relationship between (written) translation and lexicography, despite certain quibbles between the two disciplines. By contrast, lexicography is largely absent from the literature on interpreting, and vice versa: so far, interpreting has not been explored from the point of view of lexicography. In this and the following sections, and based on an ongoing research project (Dam and Tarp In progress), we shall make a first attempt at bringing the two disciplines together. For this purpose, we shall draw on research carried out in the intersection between written translation and lexicography, as laid out in the previous sections, complemented with insights from interpreting studies. Following the pattern in the previous sections, we shall start by proposing a lexicographical model of interpreting, dividing the interpreting process into phases and sub-phases where lexicographically relevant information needs may occur. After a description of the basic premises, the model itself is presented (Schema 3).

Translation and interpreting share a series of characteristics, but the different conditions under which they are performed have implications for how the two tasks can be modelled lexicographically and, ultimately, for the design of relevant lexicographical tools for each of them. Some of the phases and sub-phases identified for translation in Schema 1 can thus be transferred almost directly to a lexicographically oriented model of interpreting, whereas others need to be adapted or eliminated and new ones must be added.

In widely accepted definitions of interpreting, this activity is conceptualised as an "immediate" form of translation characterised by ephemeral presentation and instant, one-time delivery (e.g. Pöchhacker 2004). This conceptualisation sets interpreting apart from (written) translation on several counts with lexicographical relevance. For one thing, since the target text is not only a first but also a final rendition, there cannot be a separate revision phase in the lexicographical interpreting model, i.e. the post-translation phase described in Schema 1 has no counterpart in Schema 3 below. Interpreters do monitor their own speech output and occasionally correct themselves on the spur, but not in a separate phase. There is also some evidence in the literature that interpreters revise their glossaries after the event (Moser-Mercer 1992a, 1992b; Jiang 2013) or self-evaluate (Kalina 2005). Such post-processes may in principle be interesting from a lexicographical perspective, but they will not be pursued further here.

Secondly, and most importantly, interpreting is a real-time performance conducted under time pressure. Standard information search processes are therefore virtually impossible during the actual task of interpreting, but must to a large extent take place before the event. Consequently, preparation for assignments is a large topic in the interpreting literature (Moser-Mercer 1992a, 1992b; Donovan 2001; Gile 2002, 2009; AIIC 2004; Luccarelli 2006; Jiang 2013; Nicodemus, Swabey and Taylor 2014; Díaz-Galaz, Padilla and Bajo 2015; Kalina 2015).

As source speeches are generally not available to interpreters before the actual task begins (on rare occasions, speech manuscripts are available in advance but speakers tend to deviate from these in any case), interpreters' information search processes are necessarily less targeted towards their actual information needs than those of translators. On the whole, interpreters' preparation is based on anticipated information needs. Thus, rather than preparing for an assignment on the explicit basis of a source text, interpreters tend to rely on meeting documents if and when available (agendas, documents to be discussed, slides, lists of participants, speakers' bios, etc.), complemented with internet searches and the use of "other background information and terminology resources" (AIIC 2004; cf. Donovan 2001;

Gile 2002, 2009; Kalina 2015). From these sources, interpreters extract the information they (believe they) will need to perform their task. The tangible result of interpreters' preparation is normally a so-called glossary of source-language terms and their target-language equivalents to be brought along to the interpreted event, described in more detail below.

The literature contains various classifications of the stages involved in interpreters' preparatory processes (e.g. Gile 2002; Kalina 2005, 2015). A well-known classification proposed by Gile (2009, 144–146) distinguishes between advance, last-minute and in-conference preparation, depending mainly on when meeting documents are made available to the interpreter and, hence, when information acquisition can begin. Interpreters systematically ask organisers and speakers to provide them with meeting documents well ahead of assignments for advance preparation. The standard the International Association of Conference Interpreters (AIIC) contract, for example, stipulates that the documents should be sent at least 15 days before a conference. Meeting documents are, however, often difficult to get hold of. Sometimes they are made available only at the very last minute, if at all. When documents are available only immediately before the interpreted event, on the premises or interpreters are called or assigned at short notice and therefore cannot prepare in advance, they will engage in last-minute preparation. In-conference preparation, on the other hand, is based on documents received after the event has started, speeches and discussions on site and conversations with speakers and colleagues during breaks.

The advance preparation phase has been carried over, without alterations, to the lexicographical interpreting model in Schema 3 below. However, the distinction between last-minute and in-conference preparation, though valid for other purposes, is not relevant from a lexicographical perspective as interpreters' information needs, and particularly their possibilities of consulting dictionaries, are very similar in the two conditions: they work under time pressure and are only able to search for relatively simple items such as words, terms and their equivalents. Hence, in the lexicographical model of interpreting, last-minute and in-conference preparation are treated indiscriminately and subsumed under one heading: the so-called on-site preparation phase. This stage, which is conceived as a discontinuous phase surrounding the interpreting phase in the narrow sense (referred to as the online interpreting phase in the model), also encompasses breaks during assignment, i.e. offline periods that are sufficiently long to allow for information acquisition on site.

From a lexicographical perspective, then, the overall interpreting process consists of three main phases and a number of sub-phases where lexicographically relevant information needs may occur:

Schema 3: Interpreting model in a lexicographical perspective

1. The advance preparation phase where the interpreter may
   a. study meeting material (including manuscripts, if available) and other types of background material in the weeks, days or hours prior to the assignment in order to get a general idea of the subject matter, learn about specific topics and become familiar with the relevant terminology
   b. prepare a glossary with terms and equivalents to be used during the task
2. The on-site preparation phase where the interpreter may
   a. use offline periods to solve urgent problems, including to assist a colleague in need of help
   b. read speech manuscripts or other documents to be interpreted, mark the texts and translate problematic terms and words

3. The online interpreting phase where the interpreter interprets in the narrow sense, i.e. listens to source-language utterances and immediately thereafter reformulates them in the target language.

Most sub-phases in the model are optional depending on the interpreter, the context and the task. In fact, the only compulsory phase is the online interpreting phase, Phase 3. In principle, this phase involves the same sub-phases as Phase 2 in the translation model (Schema 1), i.e. reception, transfer and reformulation, but due to the time factor, no "normal" consultation of lexicographical works can take place in this phase. Hence, the three sub-phases in the translation phase in Schema 1 have been merged into one single phase in the interpreting model.

Phase 3 is included in the lexicographical model of interpreting mainly because of interpreters' (potential) use of glossaries – a lexicographical tool *par excellence* – but this phase will probably become even more lexicographically relevant in the future. Handheld mobile devices such as smartphones and, notably, tablets are increasingly making their way into interpreting booths. They are presumably still mainly used for consultation during offline periods (Phase 2), including for assisting a boothmate in need of help, but with increasingly advanced technology, dictionary consultation during online periods (Phase 3) cannot be ruled out as a standard option for the future. In fact, highly experienced interpreters are already able to perform quick searches during online periods using currently available technology.

Information needs in interpreting

In accordance with Donovan (2001), AIIC (2004) and Kalina (2015), among others, the information interpreters seek to acquire during advance or on-site preparation can be divided into three types:

1. information about the communicative context or situation (also referred to as pragmatic information), i.e. information about speakers, their attitudes and affiliations, the composition of the audience, the purpose of the event, the issues at stake, etc.
2. information about the subject matter and topics related to the interpreting task
3. information about the corresponding terminology in source and target languages.

Other classifications of interpreters' information needs have been proposed (Gile 2009; cf. Dam and Engberg 2005), but the one described above is widely used in the field. With respect to type-3 information, it should be noted that, in interpreting, the label, "terminology", is generally used to refer to terms (rather than concepts, cf. Rütten 2015), i.e. lexical items with special meanings and usages in LSP, and usually also includes general lexical items and fixed expressions.

The first type of information needs is beyond the scope of lexicography as dictionaries are unable to provide solutions to such needs, which are always related to concrete and very specific interpreting assignments. The two remaining types, however, bear close resemblance to the needs lexicographers label "cognitive" and "communicative", respectively, and are, as such, highly relevant from a lexicographical point of view, although they have not yet been discussed in this perspective. It is especially interesting to observe how interpreters transform themselves into mini-lexicographers when they compile glossaries during the preparation of an assignment.

Interpreters' glossaries may take many forms, but surveys conducted by Moser-Mercer (1992a, 1992b) and Jiang (2013) show that conference interpreters' preferences are for short and simple lists of source-language terms and their target-language equivalents for easy reference in the booth. Glossaries may in principle contain additional data, but according to the survey by Jiang (2013), interpreters tend to focus on technical terminology in their working languages, along with acronyms and names especially of organisations but also of places and people. Grammatical data, on the other hand, are generally not considered important for glossary purposes, according to the surveys. Grammar is not among AIIC's (2004) recommendations for data to be included in interpreters' glossaries, either. Pronunciation, on the other hand, is recommended for inclusion (AIIC 2004).

The surveys of interpreters' glossary preferences also produced interesting results regarding the preferred medium and format of these information tools. Perhaps surprisingly in the present digital age, the preferred medium for glossaries appears to be loose paper. With respect to format, Moser-Mercer's survey showed that interpreters' preference is for a simple format with "source language terms and target language term(s) parallel on one line" (Moser-Mercer 1992a, 303), a finding that was largely corroborated by Jiang (2013). As pointed out by Jiang, these features suggest that what is important for interpreters at work is instant accessibility. A paper-based glossary provides a broader display than the computer screen, and scrolling is not necessary. All in all, fast and accurate access to information seems vital "to meet the real-time processing needs which are part and parcel of conference interpreting" (Jiang 2013, 91).

However, in a self-observation study where Gile (2002) prepared and used a glossary for interpreting at a technical conference, this tool was found to be a long way from covering the terminological needs that arose during the conference. Based on a crude calculation, the coverage rate was below 20%, perhaps as low as 10%. Despite the fast access to data that glossaries are able to provide, there is thus still room for improvement when it comes to meeting interpreters' actual information needs.

Based on the above considerations, we can now present a model (Schema 4) that links the phases and sub-phases in the overall interpreting process shown in Schema 3 with the various types of information needs interpreters may experience in the course of an assignment, and which can be solved by means of lexicography:

Schema 4: Possible information needs during the interpreting process

1. In the advance preparation phase, the interpreter may need
    a. general and specific background information in order to facilitate comprehension of the overall subject field as well as specific topics related to the task
    b. definitions of terms, words and fixed expressions in order to understand the meeting and other background material
    c. source-language terms, words, fixed expressions, names of organisations and places, acronyms, as well as their target-language equivalents, in order to prepare a glossary and ensure rapid recognition, transfer and reformulation in the online phase
    d. information about pronunciation for rapid recognition of source-speech items and correct reformulation in the online phase
2. In the on-site preparation phase, the interpreter may need
    a. short definitions, equivalents and pronunciation of terms, words, fixed expressions, names of organisations and places, and possible acronyms, in order to solve predicted

or observed problems related to the comprehension, transfer and reformulation of the texts (to be) interpreted

b. brief background information in order to facilitate comprehension of specific topics treated at the interpreted event

3. In the online interpreting phase, the interpreter may need

    a. equivalents of terms, words, fixed expressions, names of organisations and places, acronyms, as well as information about their pronunciation.

Lexicographical assistance to interpreting

As can be seen in Schema 4, interpreters' needs for information develop progressively from broad and ample information to increasingly narrow categories. On the whole, cognitive needs dominate in the early phase(s), whereas communicative needs increasingly take over as we move from one phase to another. It is, however, more a question of degrees than of types. From a lexicographical point of view, the *types* of information needed are more or less similar in the successive phases (Phase 3 is the only exception, with no cognitive needs listed), but the *amounts* vary. As time becomes increasingly scarce, interpreters increasingly require fast and easy access to increasingly targeted and limited amounts of data.

Except for information about pronunciation, all the needs listed in Schema 4 have already been discussed in connection with the assistance lexicography may give to translation (see Schema 2). On the other hand, in Schema 4 there is no mention of information needs related to gender, inflection, collocations, syntactic properties, word formation and genre conventions. The reason is not that such needs may not occur during the interpreting process, but that interpreters tend to focus their attention on satisfying other types of information need, as explained in the previous section.

There are thus certain differences between translation and interpreting in terms of information needs, but these do not constitute any serious challenge to present-day lexicography. Audio-based data on pronunciation, although relatively expensive to produce, can easily be incorporated into the database discussed in relation to translation above. In addition, it would be fairly straightforward to design an additional set of user interfaces where only the data categories required by the interpreter in each type of situation are displayed. If these interfaces also allow for hidden data on gender, inflection, syntax, etc. to be loaded on the screen, then the interpreter, if needed, could get instant access to these data by means of a simple click or movement over the screen area.

Similarly, an additional interface could be designed to assist the interpreter in the compilation of a special glossary for use in the online phase (Phase 3). This could be done by displaying a dictionary with a reduced and pre-selected number of data fields from which relevant data could be selected (by clicking) and stored in the form of a short and simple glossary to be printed or shown on a handheld device for consultation during the interpreting task.

With respect to the information needs listed in relation to the online interpreting phase in Schema 4, there is little doubt that, objectively, almost all needs described under the translation phase in the previous Schema 2 may also occur during interpreting. However, most of these needs cannot be solved lexicographically, at least at present, due to a combination of time pressure and limitations in available technology. As explained above, information search processes during online interpreting periods cannot be ruled out. Be that as it may, from a lexicographic point of view, it is of no consequence whether interpreters attempt to solve their needs when they are online or they prefer to do so during offline periods. In either case, the task of lexicography is to provide solutions, online or offline, to help interpreters.

Finally, it should be noted that the overview of information needs presented in Schema 4 does not give a complete picture of the needs occurring during the entire interpreting process. Among other reasons, this is due to the fact that, in interpreting in particular, source and target language are dynamic rather than stable categories: what is source language in one moment may become target language the next. This is virtually always the case in dialogue interpreting as performed in, for example, community or business settings. On the other hand, many staff conference interpreters whose first language is a major one, only interpret *into* this language, i.e. it is basically always a target language for them. But then they usually work *from* more than one language, i.e. they normally deal with several source languages, sometimes in one and the same assignment. Language-wise, therefore, interpreters' information needs are often multilingual in nature (rather than bilingual, as is often the case in translation) and in constant flux. This feature needs to be taken into account when designing lexicographical tools for interpreting purposes.

On the whole, if the previously mentioned interfaces are incorporated into the lexicographical tool, the combination of one monolingual and two bilingual solutions in both language directions suggested in relation to translation could also cater for interpreters' information needs in the different phases of the overall interpreting process. Within such a set-up, a common database could feed a set of dictionaries designed to meet information needs occurring during both translation and interpreting. If this set of dictionaries includes more than two languages, it would be even more adapted to the multilingual reality of interpreting. In this perspective, special dictionaries for interpreting, which are bound to have a small audience, could be economically feasible in the digital era.

Future perspectives

The general tendency in current lexicography is the incorporation of sophisticated computer and information technologies with a view to developing still more personalised, web-based information tools. The "stand-alone" dictionary, whether printed or digital, will probably encounter growing competition from dictionaries that are integrated into other types of digital tools and media. The introduction of new techniques is opening new ways of accessing and using lexicographical data.

This development can already be observed in relation to translation dictionaries but will probably also have major consequences for dictionaries designed to assist interpreting. If speech recognition and other techniques are incorporated into devices connected to lexicographical databases, e.g. smartphones and tablets, this may lead to advanced tools capable of meeting other information needs in the interpreting booths than the ones discussed in the previous section.

The introduction of disruptive technologies has created very promising future perspectives for lexicography. We know the point of departure but we still only have a vague idea of where we will eventually arrive. However, in order to overcome all challenges along this road, it is above all necessary to strengthen the dialogue between lexicography, on the one hand, and translation and interpreting, on the other. Such a dialogue between different disciplines, we suggest, holds great potential.

Further reading

Bergenholtz, H. and Tarp, S., eds. 1995. *Manual of Specialised Lexicography*. Amsterdam: John Benjamins.

This classic manual of lexicography provides the student with an easily readable guide including many detailed examples showing how to prepare specialised dictionaries, among them translation dictionaries.

Fuertes-Olivera, P. A. and Bergenholtz, H., eds. 2011. *e-Lexicography: The Internet, Digital Initiatives and Lexicography*. London: Continuum.
In this book, various authors discuss the transition from the printed to the digital media and show how new technologies are transforming lexicography. It contains descriptions of new online information tools as well as visions for the future.

Tarp, S. 2008. *Lexicography in the Borderland between Knowledge and Non-Knowledge*. Tübingen: Niemeyer.
This book provides a comprehensive introduction to the function theory of lexicography with special focus on learners' dictionaries. It includes many detailed examples showing the reader how the theory may guide dictionary making.

Tarp, S. 2013. What should we demand from an online dictionary for specialized translation? *Lexicographica* 29, pp. 146–162.
This article dissects the LSP translation process from a lexicographical point of view. It identifies various phases and sub-phases where information needs may occur and suggests lexicographical solutions to these needs.

Tomaszczyk, J. 1989. "L1–L2 Technical Translation and Dictionaries". In *Translation and Lexicography*, edited by M. Snell-Hornby and E. Pöhl, 177–186. Amsterdam: John Benjamins.
This article describes a case study where the author took note of all look-ups in dictionaries during L1–L2 translation of a specialised book. It shows the variety of lexicographical solutions required to satisfy an LSP translator.

References

Adamska-Sałaciak, A. Forthcoming. "Bilingual Lexicography: Translation Dictionaries". In *International Handbook of Modern Lexis and Lexicography*, edited by P. Hanks and G. M. de Schryver. Berlin: Springer.
AIIC. 2004. *A Practical Guide for Professional Conference Interpreters* [online]. Available from: http://aiic.net/page/628 [Accessed 9 January 2016].
Atkins, B. T. S., ed. 1998. *Using Dictionaries: Studies of Dictionary Use by Language Learners and Translators*. Tübingen: Niemeyer.
Bergenholtz, H. and Nielsen, J. S. 2013. What is a lexicographical database? *Lexikos* 23, pp. 77–87.
Bergenholtz, H. and Nielsen, S. 2006. Subject-field components as integrated parts of LSP dictionaries. *Terminology* 12(2), pp. 281–303.
Bergenholtz, H. and Tarp, S., eds. 1995. *Manual of Specialised Lexicography*. Amsterdam: John Benjamins.
Bothma, T. J. D. 2011. "Filtering and Adapting Data and Information in an Online Environment in Response to User Needs". In *e-Lexicography: The Internet, Digital Initiatives and Lexicography*, edited by P. A. Fuertes-Olivera and H. Bergenholtz, 71–102. London: Continuum.
Burkhanov, I. 1998. *Lexicography. A Dictionary of Basic Terminology*. Rzeszów: Wydawnictwo Wyzszejszkol y Pedagogicznej.
Calvo Rigual, C. and Calvi, M. V. 2014. Translation and lexicography: a necessary dialogue. *MonTi* 6, pp. 37–62.
D'Alembert, J. L. R. 1754. "Dictionnaire". In *Tome IV of Encyclopédie, ou Dictionnaire raisonné des sciences, des arts et des métiers*, edited by D. Diderot and J. L. R. D'Alembert, 958–969. Paris: Briasson.
Dam, H. V. and Engberg, J. 2005. "Introduction". In *Knowledge Systems and Translation*, edited by H. V. Dam, J. Engberg and H. Gerzymisch-Arbogast, 1–13. Berlin: Mouton de Gruyter.

Dam, H. V. and Tarp, S. In progress. *Interpreting and Lexicography: Potential for a Dialogue?*

Díaz-Galaz, S., Padilla, P. and Bajo, M. T. 2015. The role of advance preparation in simultaneous interpreting: a comparison of professional interpreters and interpreting students. *Interpreting* 17(1), pp. 1–25.

Donovan, C. 2001. Interpretation of technical conferences. *Conference Interpretation and Translation* 3, pp. 7–29.

Fata, I. 2009. *Das zweisprachige Translationswörterbuch für Fachsprachen in der wissenschaftlichen Theorie und Praxis*. Budapest: Tinta Könyvkiadó.

Fuertes-Olivera, P. A. 2013. The theory and practice of specialised online dictionaries for translation. *Lexicographica* 29, pp. 69–91.

Fuertes-Olivera, P. A. and Bergenholtz, H., eds. 2011. *e-Lexicography: The Internet, Digital Initiatives and Lexicography.* London: Continuum.

Fuertes-Olivera, P. A., Bergenholtz, H., Nielsen, S., Mourier, L., Gómez, P. G., Amo, M. N., de los Ríos Rodicio, Á., Sastre Ruano, Á., Tarp, S. and Velasco Sacristán, M. S. 2015. *Diccionarios de Contabilidad*. Hamburg: Lemma.com.

Fuertes-Olivera, P. A. and Tarp, S. 2014. *Theory and Practice of Specialised Online Dictionaries: Lexicography Versus Terminography.* Berlin: De Gruyter.

Gile, D. 2002. The interpreter's preparation for technical conferences: methodological questions in investigating the topic. *Conference Interpretation and Translation* 4(2), pp. 7–27.

Gile, D. 2009. *Basic Concepts and Models for Interpreter and Translator Training*. Amsterdam: John Benjamins.

Hartmann, R. R. K. and James, G. 2001. *Dictionary of Lexicography.* London: Routledge.

Jiang, H. 2013. The interpreter's glossary in simultaneous interpreting: a survey. *Interpreting* 15(1), pp. 74–93.

Kalina, S. 2005. Quality assurance for interpreting processes. *Meta* 50(2), 768–784.

Kalina, S. 2015. "Preparation". In *Routledge Encyclopedia of Interpreting Studies*, edited by F. Pöchhacker, 318–320. London: Routledge.

Kaufmann, U. and Bergenholtz, H., eds. 1998. *Encyclopedic Dictionary of Gene Technology: English–Spanish*. Toronto: Lugus.

Luccarelli, L. 2006. Conference preparation: considerations and a course proposal. *Conference Interpretation and Translation* 8(1), pp. 3–26.

Mackintosh, K. 1998. "An Empirical Study of Dictionary Use in L2-L1 Translation". In *Using Dictionaries: Studies of Dictionary Use by Language Learners and Translators*, edited by B. T. S. Atkins, 121–149. Tübingen: Niemeyer.

Marello, C. 2003. "The Bilingual Dictionary". In *Lexicography: Critical Concepts II*, edited by R. R. K. Hartmann, 325–342. London: Routledge.

Moser-Mercer, B. 1992a. Terminology documentation in conference interpretation. *Terminologie et Traduction* 2(3), pp. 285–303.

Moser-Mercer, B. 1992b. Banking on terminology: conference interpreters in the electronic age. *Meta* 37(3), pp. 507–522.

Nesi, H. 2015. "The Demands of Users and the Publishing World: Printed or Online, Free or Paid for?" In *The Oxford Handbook of Lexicography*, edited by P. Durkin, 579–589. Oxford: Oxford University Press.

Nicodemus, B., Swabey, L. and Taylor, M. M. 2014. Preparation strategies used by American Sign Language–English interpreters to render President Barak Obama's inaugural address. *The Interpreter's Newsletter* 19, pp. 27–44.

Nielsen, S. 2013. Domain-specific knowledge in lexicography: how it helps lexicographers and users of accounting dictionaries intended for communicative usage situations. *Hermes* 50, pp. 51–60.

Nielsen, S., Mourier, L. and Bergenholtz, H. 2015. *Accounting Dictionaries*. Odense: Ordbogen.com.

Nord, B. 2002. *Hilfsmittel beim Übersetzen. Eine empirische Studie zum Rechercheverhalten professioneller Übersetzer.* Frankfurt am Main: Peter Lang.

Piotrowski, T. 1994. *Problems in Bilingual Lexicography*. Wroclaw: Wydawnictwo Uniwersytetu Wroclawskiego.
Pöchhacker, F. 2004. *Introducing Interpreting Studies*. London: Routledge.
Rütten, A. 2015. "Terminology". In *Routledge Encyclopedia of Interpreting Studies*, edited by F. Pöchhacker, 416–417. London: Routledge.
Sin-wai, C., ed. 2004. *Translation and Bilingual Dictionaries*. Tübingen: Niemeyer.
Snell-Hornby, M. and Pöhl, E., eds. 1989. *Translation and Lexicography*. Amsterdam: John Benjamins.
Tarp, S. 2008. *Lexicography in the Borderland between Knowledge and Non-Knowledge*. Tübingen: Niemeyer.
Tarp, S. 2013. What should we demand from an online dictionary for specialized translation? *Lexicographica* 29, pp. 146–162.
Tarp, S. 2015a. On the disciplinary and functional status of economic lexicography. *Ibérica* 29, pp. 179–200.
Tarp, S. 2015b. Structures in the communication between lexicographer and programmer: database and interface. *Lexicographica* 31, pp. 219–246.
Tomaszczyk, J. 1989. "L1–L2 Technical Translation and Dictionaries". In *Translation and Lexicography*, edited by M. Snell-Hornby and E. Pöhl, 177–186. Amsterdam: John Benjamins.
Varantola, K. 1998. "Translators and their Use of Dictionaries". In *Using Dictionaries: Studies of Dictionary Use by Language Learners and Translators*, edited by B. T. S. Atkins, 179–192. Tübingen: Niemeyer.
Wiegand, H. E. 1987. Zur handlungstheoretischen Grundlegung der Wörterbenutzungsforschung. *Lexicographica* 3, pp. 178–227.
Wiegand, H. E. 2000. "Wissen, Wissenrepräsentationen und Printwörterbücher". In *Proceedings of the Ninth EURALEX International Congress*, edited by U. Heid, S. Evert, E. Lehmann and C. Rohrer, 15–38. Stuttgart: Institut für Maschinelle Sprachverarbeitung.
Yong, H. and Peng, J. 2007. *Bilingual Lexicography from a Communicative Perspective*. Amsterdam: John Benjamins.