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Technology-Assisted Interpreting

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Abstract

Unlike translators, for whom a myriad of computer-assisted tools are available, interpreters have not benefited from the same level of automation or innovation. Their work relies by and large on traditional or manual methods. The solutions tailored to the interpreters' needs are few and still far behind. Fortunately, there is a growing interest in developing tools addressed at interpreters as end users, although the number of these technology tools is still very low and they are not intended to cover all interpreters' needs.

1 Interpreting modes and opportunities for technology

The main categories of interpreting are simultaneous and consecutive interpreting, which refers to the mode of delivering the original message. In simultaneous interpreting, the target message is given at roughly the same time that the source message is produced, whereas in consecutive interpreting the interpreter waits until the speaker has finished before beginning the interpretation and takes notes in the meantime. Apart from these two main categories, we can also include a third one: liaison interpreting, which can be either simultaneous or consecutive. Liaison interpreters work in both directions for two parties, thus the languages being used become passive and active at the same time. Other common modes practiced are whispering interpreting, sight interpreting and sign language interpreting. Interpreting modes can be further classified according to the technical equipment used, the settings, the fields of expertise and topics. However, there is not yet a single, accepted classification. Relevant authors and reputable interpreting institutions such as ITI[1] or AIIC[2] have their own classifications. The list below comprises the most frequent interpreting modes encountered in industry literature and offered by company services. By no means is it intended to be exhaustive.

- *Whispered interpreting* (also *chuchotage*) is a subcategory of simultaneous interpreting whispered into the listener's ear for which no specialised equipment is required.
- *Conference interpreting* takes place in multilingual conferences and it can be either simultaneous or consecutive interpreting, depending on the capacity of the conference and on the technical equipment available.
- *Business interpreting* is a subcategory of liaison interpreting used for smaller groups or business meetings, visits to a foreign country, one-on-one interviews and so on.
- *Court interpreting* refers to interpreting services provided in a legal setting such as courts of law. It could be either simultaneous or consecutive, depending on the technical equipment and the audience.
- *Teleinterpreting* (also *remote interpreting*) is done through a remote or offsite interpreter via telephone (*over the phone interpreting, OPI*) or via video (*video remote interpreting,*

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[1] www.iti.org.uk
[2] www.aiic.net

VRI), especially in services related to community interpreting. It is mostly consecutive, but it can also be simultaneous.

- *Community interpreting* is another subcategory of liaison interpreting; its main aim is "*to enable people who are not fluent speakers of the official language(s) of the country to communicate with the providers of public services so as to facilitate full and equal access to legal, health, education, government, and social services*" (Roberts, 1994:127).

There is a manifold of possible interpreting and scenarios, and, therefore, any technology tools developed for interpreters should necessarily account for this fact. Most interpreting services (except for teleinterpreting) are on-site, meaning the clients are in the same place where the service takes place. This limits the possibilities to use a suite of tools to assist interpretation. To the best of our knowledge, such a system has not yet been developed. However, thanks to the development of smart phones, notebooks and tablets, interpreters have at their disposal some useful applications (see section 2).

The chances to develop tools for interpreters increase with regard to the preparation phase prior to any interpreting service, when interpreters need to acquire as much information and specialised knowledge as possible in order to get ready for their work. Once interpreters know the topic, the setting and all the features of the interpreting service, they can start compiling terminological resources such as glossaries, managing documents and so on. The correct management of these tools will usually mean better output. Another scenario prone to technology developments is training, where all kind of software and applications could be used to train interpreters at various stages and in different modes.

2 Technology tools for interpreters

Several tools and applications have been implemented to meet the needs in different interpreting contexts and modes. Even though some interpreters still store information and terminology on scraps of paper or excel spreadsheets, there are some specialised computer and mobile software that can be used to compile, store, manage and search within glossaries. They can typically be used to prepare an interpretation in consecutive interpreting or in a booth. Those applications are quite similar to the look-up terminology tools currently used by translators.In fact, some of them have been developed to cater to the needs of both translators and interpreters.

Intragloss[3] is a Mac OS X software created specifically to help interpreters when preparing for an event by allowing them to manage glossaries. This application can be simply defined as a glossary and document management tool created to help the interpreter prepare, use and merge different glossaries with preparation documents, in more than 150 different languages. It allows to import and export glossaries from and to Microsoft Word and Excel formats. Every glossary imported to or created in is assigned to a domain glossary, which contains all the glossaries from the sub-areas of knowledge, named 'assignments'. The creation of an assignment glossary can be done in two different ways: either by extracting (automatically or manually) all the terms from the domain glossary that appear in the documents, or by highlighting a term in the document, search for it on search sites (such as online glossaries, terminology databases, dictionaries and general Web pages) and adding the new translated term to the assignment glossary. The system allows for adding remarks, i.e. meta-information, to the glossary entries (see Fig. 1).

In short, Intragloss is an intuitive and easy-to-use tool that facilitates the interpreters' terminology management process by producing glossaries (imported or created *ad hoc*), by searching on several websites simultaneously and by highlighting all the terms in the documents that appear in the domain glossary. However, it is currently platform dependent and only works on Mac OS X platforms.

InterpretBank[4] is a simple terminology and knowledge management software tool designed both for interpreters and translators using Windows and Android. It helps to manage, learn and look up glossaries and term-related information. Due to its modular architecture, it can be used to guide the interpreter during the entire workflow process, starting from

[3] https://intragloss.com

[4] www.interpretbank.de

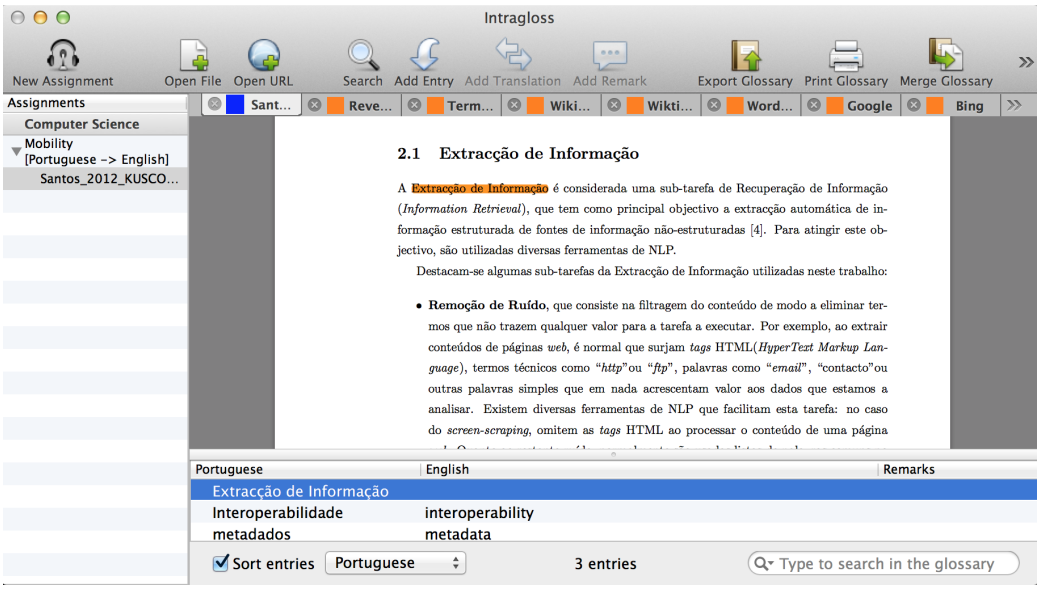

Figure 1: *Intragloss* screenshot.

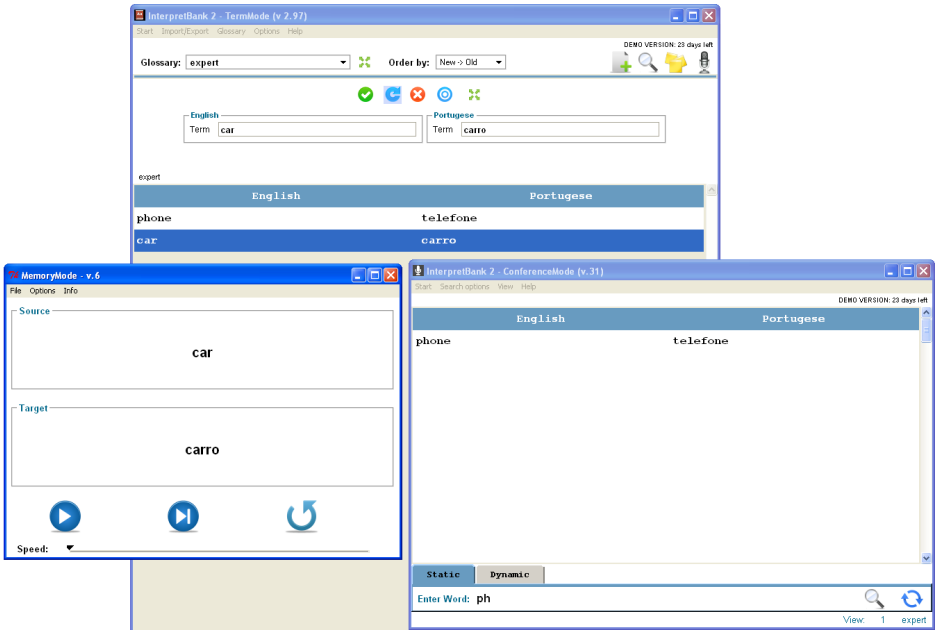

Figure 2: *InterpretBank* screenshot.

the creation and management of multilingual glossaries (TermMode), passing through the study of these glossaries (MemoryMode), and finally allowing the interpreter to look up terms while in a booth (ConferenceMode). See Fig. 2.

InterpretBank has also an Android version called InterpretBank Lite. This application is a simplified version of InterpretBank, specifically designed to access bi- or trilingual glossaries previously created with the desktop version. It is useful when working as a consecutive, community or liaison interpreter, when a quick look up at the terminology list is necessary.

InterpretBank has a user-friendly, intuitive and easy-to-use interface. It allows us to import and export glossaries in different formats (Microsoft Word, Microsoft Excel, simple text files, Android and TMEX) and automatically proposes translations to terms by taking advantage of online translation portal services. However, it is platform dependent (only works on Windows), it does not handle documents, only glossaries, and

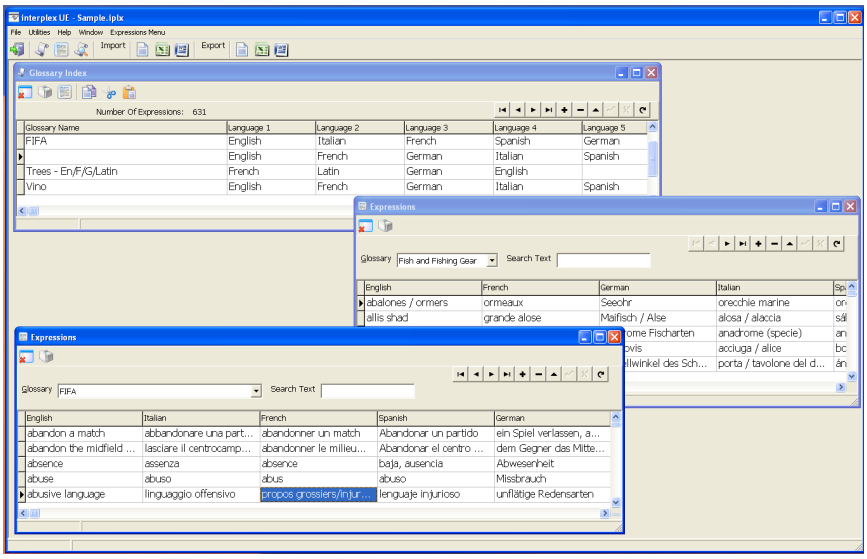

Figure 3: *Intraplex UE* screenshot.

it requires a commercial license.

Another user-friendly multi-lingual glossary management programme that can be used easily and quickly in a booth while the interpreter is working is **Interplex UE**[5]. Instead of keeping isolated word lists, it allows to group all terms relating to a particular subject or field into multilingual glossaries that can be searched in an instant. This programme enables us to have several glossaries open at the same time, which is a very useful feature if the working domain is covered by more than one glossary. Similar to the previous analysed programmes, Interplex UE also allows us to import and export glossaries from and to Microsoft Word, Excel, and simple text files (see Fig. 3).

Interplex UE runs on Windows; nevertheless, it has a simpler version for iOS devices, one named Interplex Lite, for iPhone and iPod Touch, and another named Interplex HD, for iPad. Both glossaries and multi-glossary searchers offer the functionality of viewing expressions in each of the defined languages.

In general, Interplex UE has a user-friendly interface and it is regularly updated. It allows us to import and export glossaries from and to Microsoft Word and Excel formats. However, it, too, is platform dependent (Windows and iOS only), does not handle documents, only glossaries, and requires a commercial license.

The next two applications are particularly relevant for conference interpreting (simultaneous mode). **LookUp**[6] is a commercial multilingual glossary management tool developed for Windows, aiming to be used during simultaneous interpreting and while translating. It offers support for multilingual glossaries (English, German, Spanish, Italian and French), and its main purpose is to consult terminology rapidly while interpreting in a booth. **The Interpreter's Wizard**[7] is a free iPad application capable of managing bilingual glossaries in a booth. It is a simple, fast and easy-to-use application that helps the interpreter to search and visualise terminology in seconds.

Unit converters could also prove beneficial to interpreters when familiarising with new terminology measures such as temperature, distance, currency, acceleration, finance, speed, weight/mass and so on. **ConvertUnits**[8] and **OnlineConversion**[9] are two illustrative samples. Both seem to be quite comprehensive, providing online conversion calculators for all types of measurement units. Apart from this, interpreters can also find measure conversion tables for International System of Units, as well as calculators and conversers for units of acceleration, angles, area, energy, density force, power and pressure, astronomical units,

[5] www.fourwillows.com

[6] www.lookup-web.de

[7] http://the-interpreters-wizard.topapp.net

[8] www.convertunits.com

[9] www.onlineconversion.com

clothing sizes, cooking volume units, mapping and navigation units, flowrates, etc. For Windows, there's **Convert**[10], and for Mac OS X, there's **Converto**[11]. These are two free and easy-to-use unit conversion programmes that convert the most popular units (additionally, Convert includes the ability to create custom conversions). There are also several mobile applications that can be also used, such as **Convert Units for Free**[12] and **Units**[13] for iOS devices, or **Unit Converter**[14] and **ConvertPad**[15] for Android devices.

Finally, corpora and corpus management tools (CMT) have proved most beneficial for interpreters as a device to speed up the preparation phase and to improve the quality of the input. A corpus can provide vast amounts of domain expert knowledge and accurate terminological and phraseological information in an efficient, effortless and inexpensive way.

3 Note-taking applications

Consecutive interpreters use a specific system of taking notes to retrieve part of their source speech understanding from memory while minimising the processing effort. This supporting technique is usually performed manually (pen and paper) and will continue in this manner for many years to come. However, as more and more interpreters are turning to mobile devices to take notes, it is just natural that those devices become the favourite note-taking and ubiquitous capture tool on the go. In what follows, a good number of automated note-taking devices are presented.

Evernote[16] is a very dynamic and useful tool to keep more effective notes. It allows us to create an agenda note for each event, including any file, snapshot of handwritten note, audio message, Web page, PDF or Microsoft document. Evernote can also be used to work in a team, to keep event agendas in a shared business notebook so everyone can access the details of upcoming events, and to review action items that result from these events. With Evernote everything is shareable and accessible across all platforms. **Inkeness**[17] is also a very useful tool to write down ideas, take notes and make sketches. **Penultimate**[18] is similar, but, in addition, it allows the organisation of notes in notebooks. Inkeness and Punultimate are only available for iPad devices, and both enable sharing through Evernote and by e-mail. **LectureNotes**[19] and **PenSupremacy**[20] are two similar applications for Android. **My BIC Notes**[21] is an application specially designed for Android and iOS tablets. This application provides a set of tools for holding notes, drawing quick ideas or even doodles. In addition, it offers the functionality of adding sticky notes with personalised text, pictures and geometric shapes to the notes then printing them or sharing with others via e-mail.

Along the same line, there is a computer-assisted tool for semi-automation of the note-taking in consecutive interpreting that Rafajlovska (2013) discusses in her paper *Natural Language Processing Approach for Macedonian-French and Macedonian-English Interpreting based on Oral Sociopolitical Corpora*. This application provides a keyword with the most frequent symbols used by consecutive interpreters, which are linked to two *ad hoc* parallel dictionaries (Macedonian/English and Macedonian/French). By using the keyword, consecutive interpreters can take the same notes as they could on paper, but then they can also convert those notes into a readable message and save it for future reference.

Finally, digital pens appear to be the answer to the demand for dynamic technology capable of synchronising writing with ambient sound. Today these pens use real ink and write on real paper. **Sky Wifi Smartpen**, **Echo Smartpen** and **Livescribe** commercialised by Livescribe Inc.[22] and **Equil JOT**[23] are just some examples of smart digital pens. These four pens are capable of linking the written notes with ambient sound and uploading it to a computer over Bluetooth, Wireless or USB. Additionally, the provided software can be used to fully exploit the OCR

[10] joshmadison.com/convert-for-windows
[11] http://fiplab.com
[12] www.freetheapps.com
[13] http://homegrownsw.com/units
[14] http://androidboy1.blogspot.com.es
[15] www.mathpad.com
[16] https://evernote.com
[17] www.fenrir-inc.com
[18] http://evernote.com/penultimate
[19] www.acadoid.com
[20] https://sites.google.com/site/debarshishomepage
[21] www.bicworld.com
[22] www.livescribe.com
[23] www.myequil.com

capabilities of the pen and, for example, build glossaries. Another advantage of digital pens is the freedom to focus on listening and participating instead of worrying about catching every word during an event.

4 Voice recording and interpreter training

There are currently a number of applications that allow voice recording for training practice. Useful applications for managing text and audio files are **GoodReader**[24] and **Documents**[25]. Both tools allow the organisation, annotation and synchronisation of files of text (.TXT, .PDF), images, sound or video. They are available for iOS devices. Applications with a dual function are **Audacity**[26], **Adobe Audition**[27], **AudioNote**[28], **Notability**[29], **QuickVoice**[30], **Voice Dictation**[31], **Voice Pro**[32], amongst others. Besides voice recording, they allow the conversion into several audio formats, editing and quality improvement. Some of these tools provide interesting functionalities. For example, **AudioNote**[33], developed for multi-platforms (Windows, Mac OS X, Android and iOS), and **Notability**[34], for iOS, are interesting types of note-taking applications. Both are simple but powerful tools that combine the functionality of a notepad with voice recorder – a perfect choice for interpreters requiring a tool to synchronise text, drawings, photos, or handwritten notes with audio.

Simpler but equally useful, **Voice Dictation**[35], for iOS and **Voice Pro**[36] for Android, are two examples of easy-to-use voice recognition applications. Instead of typing, both applications use the microphone to convert audio notes to text automatically, which is very convenient to plan things to do, appointments and notes on the go.

Text-to-speech apps for iPad can also be successfully applied to teaching and improving language skills. For example, **Speak it!**[37], **Web Reader HD**[38], **Voice Dream Reader**[39], **Voxdox**[40] and **Talk - Text to Voice**[41] allow users to listen to words, texts, e-mail in several languages and formats. They are also available for Mac OS X, Windows, iOS and Android.

Finally, there is a very limited set of integrated tools that assist interpreters during their services or when training. **Black Box** (Sandrelli, 2005) is a computer-assisted interpreter training tool designed to help interpreters work with a range of different materials (texts, audio, video, different types of exercises) and store their results for later review. It can be used to practice in different ways: either by interpreting some audio or video clips or by doing some practical interpreting exercises, such as shadowing, cloze exercises or sight translation. It also allows teachers to edit and break down video and audio recordings to create different exercises and adapt authentic conference materials to the students' level of expertise. Black Box can be considered a suitable training workbench for trainee interpreters.

Other web-based environments have recently been created along similar lines. **InterpretaWeb**[42] and **Linkinterpreting**[43] provide interpreters and students with a wide range of exercises (cloze, memory, cluster), and complete speeches to practice simultaneous and consecutive interpreting, along with information resources and news related to interpreting. These websites are of great use to students and for novice interpreters who are willing to practice and improve their interpreting skills.

[24] www.goodiware.com
[25] http://readdle.com
[26] http://audacity.sourceforge.net
[27] www.adobe.com/products/audition.html
[28] http://luminantsoftware.com/iphone/audionote.html
[29] www.gingerlabs.com
[30] www.nfinityinc.com/quickvoiceip.html
[31] https://itunes.apple.com/us/app/voice-dictation-voice-to-sms/id492594590?mt=8
[32] www.voicepro.it
[33] http://luminantsoftware.com
[34] www.gingerlabs.com
[35] http://quanticapps.com
[36] http://forum.voicepro.it
[37] https://itunes.apple.com/us/app/speak-it!-text-to-speech/id308629295?mt=8
[38] https://itunes.apple.com/us/app/web-reader-hd-text-to-speech/id376528713?mt=8
[39] www.voicedream.com
[40] www.voxdox.net
[41] https://plus.google.com/communities/107986392540899459664
[42] www.interpretaweb.es
[43] http://linkterpreting.uvigo.es

5 Conclusion

Technology tools open up a new world of possibilities for interpreters. This paper has presented an overview of tools and applications available for interpreting practice and training. Although the number of these technologies is growing fast due to an increasing interest towards interpreters' needs, they are still insufficient and unable to fulfil all the necessary requirements. There is an urgent need to develop technologies that automate the process, increase the productivity and ease the labour-intensive activities of an interpreter (either in the preparation stage, before their interpreting service or during it). A next step in the right direction could be to gather detailed information to better ascertain interpreters' technology awareness and real needs in order to design new tools and improve existing ones.

References

Rafajlovska, A. (2013). *Natural Language Processing Approach for Macedonian-French and Macedonian-English Interpreting based on Oral Sociopolitical Corpora*. Master Thesis, Université de Franche-Comté, France and Universidade do Algarve, Portugal.

Roberts, R. (1994). Community Interpreting Today and Tomorrow. In Krawutschke, P., editor, *35^{th} Annual Conf. of the American Translators Association*, pages 127–138. Medford, NJ: Learned Information.