Introduction to the Bible Societies' Computer Tools for Bible Translation

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1. Introduction

It would be very hard for today's scholars and Bible translators (at least in the more developed parts of the world) to imagine not having computer in our daily works as scholars and translators. The reason that computer becomes seemingly indispensable is not because our works cannot be done without it. As a matter of fact, computer has not been part of our life until very recently; and we should also remind ourselves that none of the great versions in the history, such as Latin Vulgate, Luther Bibel, and King James, was done with computer. The reason that we are so reliant on computer today is because it is a very power tool that makes many parts of the job easier and faster. Sometimes it also makes possible for us to do our jobs in new ways with which the overall quality of the output can be improved.

In the past several years, the Bible Societies has developed several computer tools for Bible translation: Paratext, Checklists Tool, Translation Notes Editor (TNE), and Translation Management Component (TMC). The aim of this article is then to provide a brief introduction to these tools. Since tools are always designed to suit certain purposes, the first part of the following discussion will be a brief revisit of certain aspects of the activities of Bible translation to identify the areas that computer may be used. The second part of the article, then, will be the introduction of the computer tools not only by describing their functions but also by pointing out how they are related to the activities of Bible translation.

2. Bible Translation Re-visited

From the viewpoint of text-processing: One basic nature of Bible translation is that Bible translation is a kind of writing activity, just like many other

kinds of writing activities. The translators need to write down the translation by means of a certain tool, no matter it is pencil and paper or it is computer. To be a tool for Bible translation, the computer program requires being able to handle basic functions of text processing, such as input, editing, filing, etc.

From the viewpoint of translation process: The core translation process includes the following steps: (1) the grammatical and semantic analysis of the source language; (2) the transfer from the source language to the receptor's language; and (3) the restructuring in the receptor's language.[1] For the second and the third steps, the state of the art of computer technology may not be able to help much; while for the first step, today's computer technology has plenty to offer. Parsing information, electronic lexicons of the original languages and electronic Bible commentaries are among the most useful ones.

From the viewpoint of review process and consultant checking: Bible translation today is basically teamwork. The translation team normally comprises translators, reviewers, and the translation consultant. The help that computer can offer in this area includes tools for communication when the team members are apart from each other, tools for exchange of comments and manuscripts, and also tools for marking comments. In addition, for the purpose of checking, the powerful searching ability of computer can also be used to check various aspects of the manuscript so that a very high level of consistency of terms and phrases used in translation can be achieved.

From the viewpoint of project management: One of the crucial tasks in project management is the tracking of the progress in comparison with the planned schedule. Another important task in project management is to keep backups throughout the very long period of the project. These tasks are well within the capability of today's computer technology.

From the viewpoint of publishing process management: The development of audio and video scriptures does not change the fact that print media is and will continue to be one of the major types of Bible production. The format of print media requires the manuscripts generated to have proper markings for features such as headings, sub-titles, running headers, different types of paragraphing, chapter and verse numbers, and footnotes, etc. Although all the markings can be done after the manuscripts have been yielded, adding the

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1) See Figure 6 in Eugene A. Nida and Charles R. Taber, *The Theory and Practice of Translatio* (Leiden: Brill, 1969), 31.

markings during translation proves to be a way more efficient and less prone to errors. A way of using computer in this area can be the generation of pre-defined templates (i.e., with all the chapter and verse markers) for translators to start with. In addition to this, computer can also be used for checking the markers by comparing with standard templates or with a model text that comes with markers.

The above brief revisit shows that a comprehensive computer solution for Bible translation should consider the following elements: (1) basic text-processing functions; (2) provision of adequate resources; (3) tools for communication and exchange of notes and comments; (4) tools for various kinds of checking; (5) backup and restore functions; (6) tools for tracking progress; and (7) basic pre-processing for publishing.

3. The Bible Societies' Computer Tools for Bible Translation

The existing computer solution provided by the Bible Societies comprises the following four parts: Paratext, Checklists Tool,[2] Translation Notes Editor (TNE), and Translation Management Component (TMC). Each of the tools is designed to include one or more of the elements identified above.
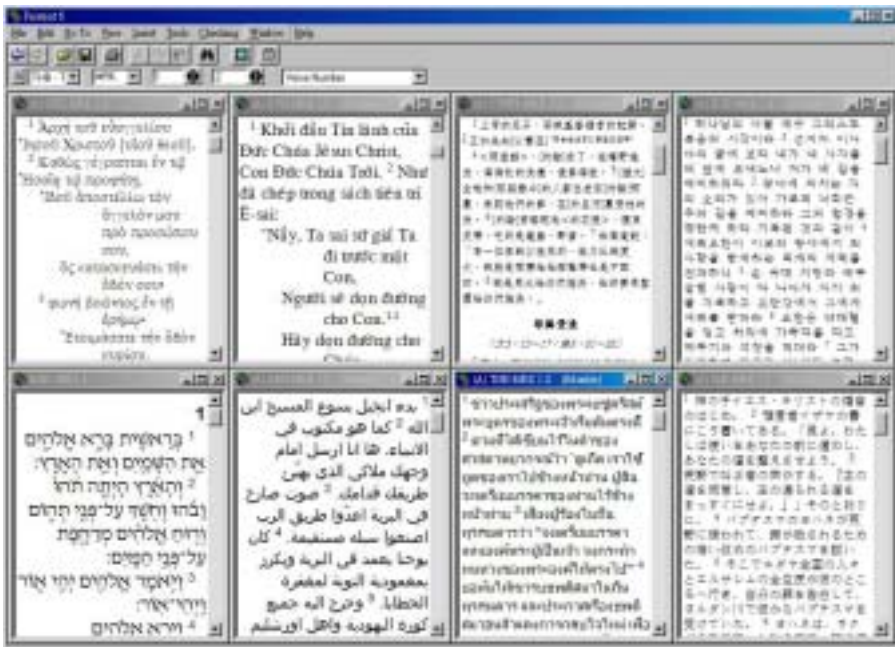
3.1. Paratext[3]

Among the four, the one most relevant to the translators is probably Paratext. Paratext was originally created by Reinier de Blois, who was a translation advisor in African Region and now is a translation consultant with UBS. The basic idea of Paratext, as shown by its name, is to display the original texts and model versions alongside with the version on which the translator is working. In such a way, the translator can easily consults the original texts and other versions while translating. For the purpose of translation, basic text-processing functions, such as copying, cutting, pasting, searching, and replacing, were also built in.

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2) Checklists Tool can be run within Paratext and, therefore, seen as a component of Paratext; while it is actually a stand-alone program which can be run independently.

3) The information of this section is indebted to Nathan Miles.

When it was decided to make Paratext widely available, the responsibility of development of the program was transferred to a team in Dallas; while Reiner de Blois continued to work on modules of original language tools and maintain the Greek and Hebrew resources to be used in Paratext. Before the team in Dallas assumed the responsibility, Reiner de Blois had issued 3 versions of Paratext and the third version had allowed unformatted editing and simultaneous scrolling of multiple texts. In version 4, which was the first Dallas release, a standardized user interface was supplied; and later in version 5 the function of formatted editing was added. Until then, however, the encoding used was ANSI and, as a result, Paratext could not work fully properly with many non-roman scripts, including Chinese, Japanese and Korean (CJK). One of the major breakthroughs of Paratext 6, which is being beta-tested and scheduled to be released early next year (2003), is the support of Unicode, which means most of the non-roman scripts, including CJK scripts, should work well with the newest version (see Screen Shot 1).

Screen Shot 1

From the very beginning, the design of Paratext has included the parsing information and lexicons for Greek and Hebrew texts. In vesion 6, these functions are realized by two original language study tools, Analusis and

Vocabula (see Screen Shot 2). With Analusis, the translator can easily display the dictionary forms and parsing information of all the Greek or Hebrew words in the verse in question; and, whenever it is needed, the translator can look up the Greek or Hebrew word in question in one of the three dictionaries supplied by Vocabula.

Screen Shot 2

Apart from the original language study tools, UBS Handbooks are now also included in Paratext 6 as part of the resources for the first time. The Handbooks as a whole act as a Bible version in Paratext 6 and, therefore, it is shown in a separate window as other Bible versions do (see Screen Shot 3).
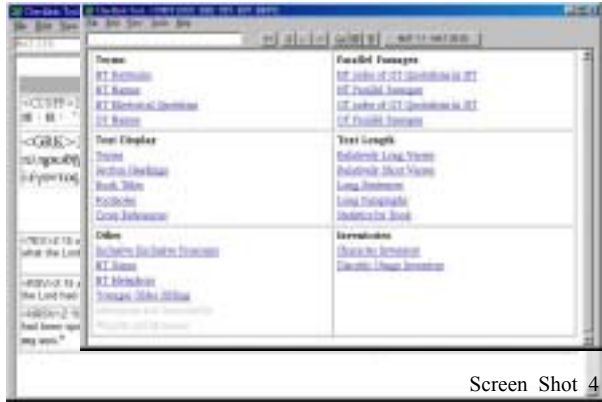
Another significant advance of Paratext 6 is the integration with Checklists Tool. As Checklists Tool can be run as a stand-alone program, it will be introduced in next section.

Screen Shot 3

3.2. Checklists Tool

Checklists Tool is a joint product between UBS and SIL. Several of its functions have existed as stand-alone DOS programs or scripts which can be run or called by earlier versions (4 and 5) of Paratext. However, it is with Paratext 6 that all those stand-alone programs and scripts are gathered together to become one integrated program, Checklists Tool. Checklists Tool is not only a collection of the old checking tools, though. All the old checking tools have been enhanced before they are incorporated into Checklists Tool; and, in

addition, new features are also added. Checklists Tool is actually designed in a way that, as long as the standard of the interface is followed, new functions can be easily "hooked up onto Checklists Tool.

Screen Shot 4

Screen Shot 5

The checking functions included in Checklists Tool at this moment are divided into six categories (see Screen Shot 4): (1) Terms, including NT Keyterms, NT Names, NT Rhetorical Questions, and OT Names; (2) Parallel Passages, including NT order of OT Quotations in NT (see Screen Shot 5), NT Parallel Passages (see Screen Shot 6), OT order of OT Quotations in NT, and OT Parallel Passages; (3) Text Display, including Verses, Section Headings, Book Titles, Footnotes, and Cross References; (4) Text Length, including Relative Long Verses, Relative Short Verses, Long Sentences, and Long Paragraphs; (5) Other, including Inclusive/Exclusive Pronouns, NT Genre, NT Metaphors, and Younger/Older Sibling; and (6) Inventories, including Character Inventory and Diacritic Usage Inventory.

Screen Shot 6

Among the computer tools introduced here, Checklists Tool is the one most relevant to the improvement of quality of translation. Not only does Checklists Tool make some of the most notorious but essential checking processes (such as parallel passages in the OT and the NT and the OT quotations in the NT) much easier but also it opens new dimensions in consistency checking. For example, those functions under text length can

generate statistics information for the team to identify areas where the translator might miss or repeat a certain part of the original texts (Relative Long and Short Verses) and also areas where the translation might be awkwardly complex or unnaturally long (Long Sentence) or might deviate from the style that the rest of the translation use (all the checking functions).

Moreover, the checking functions under "Text Display" can ensure the finalized manuscripts to have all the basic markings that are essential for publishing. In such a way, the publishing process can be accelerated and errors of format can be minimized.

3.3. Translation Notes Editor (TNE)

For translators and reviewers, there is always a need to write down notes to explain the reason of the choices of terms and phrases in translation and to record the difficulties encountered and the solutions come to. Between translators, reviewers and their translation consultant there is also a need to communicate with each other about the exegetical and translation issues when the team feel the need of the input from the consultant. For the translation consultants, the record of the issues that the translation teams encountered as well as their solutions is a very valuable resource for later translation project. The design of TNE is then to meet all the above needs. TNE can be used as a stand-alone program, while it can also be used to link with Paratext. When TNE is running, the user can click the TNE icon in Paratext to open a new Note window to fill in (see Screen Shot 7). The notes taken later can be exported and sent to the other people in the team or to the consultant for input.

TNE is actually more than a tool of taking notes. Coming with the program, there are standard databases of translation notes generated by translation consultants of UBS and SIL in the past. This makes TNE also a very valuable resource for the translators in translating. As TNE can scroll simultaneously with Paratext, the translators can easily turn to TNE to look up all the translation notes related to the verse that they are translating (see Screen Shot 8).

3.4. Translation Management Component (TMC)

TMC is designed not for translators and reviewers but for people who are responsible for translation projects (such as translation officers, translation managers, general secretaries, regional coordinators, and world service coordinator etc.) to record the basic data and keep the tracks of translation projects (see

Screen Shot 9

Screen Shot 9). All the information in TMC in individual's computer can be synchronized with a central database by Internet connection. In such a way, all the people who use this program can always keep the most updated information that they need to keep. The WTPR can also be generated easily with the information in the central database.

4. More Things to Come

By the grace of computer, Today's translators and translation officers do not need to carry a lot of lexicons, dictionaries, and reference books to attend review meetings. With the help of the computer tools introduced above, thorough checking for consistency becomes much easier and more efficient and the management of translation projects also becomes less burdensome. What has been introduced is not the end of the story, though. The development team in Dallas is now working on more new features for Paratext and TNE so that the translation teams around the world can be equipped with even more powerful tools. What they are doing include the

addition of critical apparatus of UBS[4] and HOTTP into the Greek and Hebrew texts in Paratext, and the support of Unicode for TNE (so that non-roman script can be used for writing notes). The link between TNE and e-mail service has also be discussed and this should be realized one day. Therefore, let us look forward to more things to come to help us in Bible translation.