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PARATEXT: USER-DRIVEN DEVELOPMENT

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Introduction

From its beginnings, the Bible translation software Paratext has developed in response to feedback and suggestions from its users. The initial prototype was developed by Reinier de Blois, a translation officer supporting projects in Africa. Almost immediately his colleagues saw how this program could benefit other translators and translation consultants. Paratext became the flagship tool supported by the UBS Translation Computer Resource Group (TCRG). The first version (Paratext 5) was launched at the UBS Triennial Translation Workshop (TTW) in 1997. At the time the TCRG calculated that if at least 20 percent of UBS translation officers endorsed this program and fostered its use among the projects they served, this would constitute a critical mass ensuring the success of Paratext as a viable tool worthy of ongoing investment of resources for further development. In fact the launch of Paratext 5 was successful beyond anyone's dreams. Not only was it adopted almost universally in UBS projects, SIL translation teams embraced it enthusiastically as well. Very quickly the success of the initial Paratext development and its widespread deployment in the translation community created a new challenge for the UBS TCRG—how to effectively support deployment and implementation of Paratext in a rapidly growing user community without impeding the ongoing development of the program.

This new challenge resulted in the creation by TCRG (reconstituted as TPCRG with the addition of publishing to its mandate) of the Institute for Computer Assisted Publishing (ICAP). The mandate of ICAP was to build a community of support for users of Paratext and the growing suite of tools surrounding it. In its development, ICAP continued the user-driven focus guiding the successful development of Paratext. On the development side, ICAP helps to foster and facilitate communication among the individuals and entities involved in the development of Paratext and its associated tools, such as Publishing Assistant and Concordance Builder. On the deployment side, ICAP helps to foster education in support of best practices in the use of the tools. The fact that ICAP operates as a community rather than a hierarchy helps to ensure user focus and engagement at all levels of the development and use of Paratext. This has contributed to a high level of satisfaction among Paratext users, as indicated by comments that regularly come to ICAP staff in Kitchener, Canada, responsible for Paratext registration and distribution.

The latest version of Paratext—version 7—was launched at the UBS TTW in June 2009. This version represents a complete rewrite of the tools, focusing

on more thorough integration of the various components, greater attention to the needs of tentative computer users, and the addition of many new features to facilitate better work flow and sharing of project data. The latest update—version 7.1—was launched in November 2010.

Below we profile some of the new and improved features of Paratext 7.1. The development team has been very intentional about listening to our user community and responding to their needs. Entering text in the editing window has been made much easier through access to a variety of views which can be personalized to the needs of the users. Text entry is enhanced, even for people who know little about format markers. Sharing among multiple users within a project is automated to a large extent. Security of the text is ensured through the new history and backup feature. The glossing feature has been enhanced to facilitate back-translations. The source language tools have been fully integrated into the program. Spell checking has been greatly enhanced in version 7.1 and the Parallel Passages tool has been added.

Project sharing

One of the most exciting new features in Paratext 7 is the ability to track and share changes to projects. Multiple translators can now safely and easily work on the same project simultaneously on different machines. With a single click, users working in different locations can receive each other's changes and get the most recent version of a project. This sharing of changes can be done either through a central, secure internet server or via a USB key (or "flash drive"). Multiple changes made simultaneously to the same book are carefully and automatically merged. In the rare case of a conflict, users are notified and given an opportunity to merge the changes manually.

History and backup

The automatic tracking of changes is a powerful feature for projects, as users can see the complete history of who has made what changes to the text. A project team can revert their text back to any past version and can also selectively undo any individual past editing. Once a project has been shared on the internet, it is securely stored on a central UBS server and is protected against accidental or even malicious destruction. Backing up a project with Paratext 7 means that not only the current state of the project is preserved, but its entire history as well.

Security

Paratext 7 is designed to carefully protect the security of shared projects, allowing only authorized users to make changes to the official text. Users cannot access a shared project without first being added and given appropriate editing permission in the project by the project administrator. The designated project administrator must explicitly select who is allowed to edit the project, which prevents non-translators who have a copy of the project from accidentally introducing changes.

Workflow

Paratext supports a wide variety of workflows for project sharing. A team working in a peer-to-peer environment can configure it to share all changes

between themselves. A team which has a coordinator can configure Paratext to send all changes first to the coordinator for approval before distributing them to the other team members or to external reviewers.

Views

Paratext 7's editing window allows users to see the text in a number of different views. Users can quickly flip between views depending on their preference and needs at the time.

Standard view shows all of the markers, but formats the text to look closely like the final printed version as well as keeping footnotes in a separate window. It is fully editable and updates the formatting as users type. Users can immediately see the effects of formatting while keeping the markers visible. In addition, a popup window helps users select appropriate markers for the current location in the text (Figure 1).

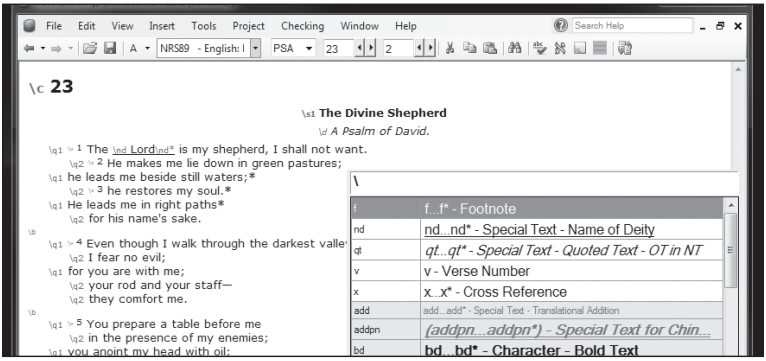

Figure 1. Formatted mode showing marker popup

Basic view is designed for users with less computer experience. It only allows keying in and editing of the text, and preserves the existing markers and structure. The user can edit an existing translation or create a new translation using the structure and markers of an existing translation as a template.

Preview view shows an approximation of formatting in the printed version while hiding all markers. Text can only be viewed, not edited, in this view.

Unformatted view is for advanced users who want to see and edit the raw markers and text, and does not format the text.

Project Notes

A translation project's data consist of much more than the text; they are also the comments, discussions, and decisions that were made during and after its creation. Project Notes is a new feature in Paratext 7 which allows users to make notes that can be attached to any word or phrase in the project (Figure 2, next page). Notes are automatically shared with other users, who can add their own comments to the same note. Notes can be marked as "resolved" once the issue has been dealt with. This gives translation teams a flexible and easy-to-use tool for recording, discussing, tracking, and archiving translation issues.

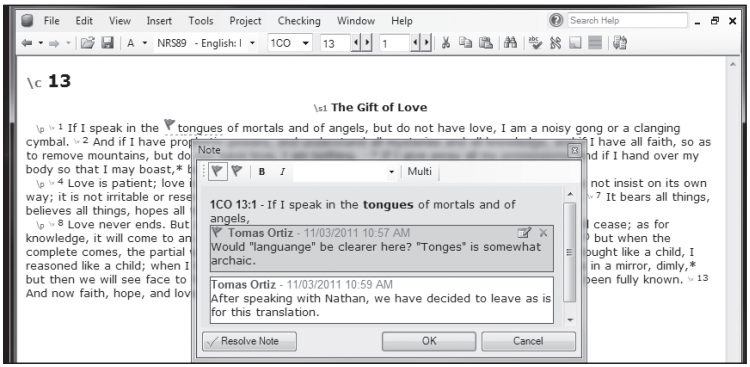

Figure 2. Inserting and commenting on a project note

Project Progress

Translation projects go through a number of stages. These stages typically include an initial draft translation, an internal review, a review by a consultant, and a final review by the community. Paratext 7 includes a tool called Project Progress that allows users to record the progress of a translation on a per-book, per-chapter, and even per-verse basis.

Users can view the progress of the entire project at a glance and can examine the progress within any given time frame, such as the last year or last month. Paratext will even project a completion date for the project based on the progress thus far. Project progress is shared along with other changes to the project, meaning that individual translators can update their progress as they work. Seeing all progress information together in one chart helps to encourage the translators and also helps to show supporters the clear progress that is being made.

Interlinear tool

Paratext 7.1 includes the powerful, multipurpose Project Interlinearizer (Figure 3), which is useful for creating back-translations, producing interlinear versions, and adapting texts from one language to another. Many projects rely on the creation of a back-translation as part of the translation process, which is an extremely time-consuming and error-prone operation. The Project Interlinearizer uses a technique called *statistical glossing* to automatically and instantly create a back-translation which can then be improved and corrected. The performance of the statistical glossing depends on the project and target languages, but for closely related translations the initial guesses are remarkably accurate, as seen below. The guesses are more reliable when a fairly large amount of target language text is available for analysis.

Users can approve or correct the glosses, which not only rapidly improves the quality of the back-translation, but also creates a lexicon which can later be adapted to form the basis for a dictionary. The back-translation or interlinearized text can also be printed, producing an offline copy for review. More advanced users can break down words into their component morphemes and assign glosses to each individual part.

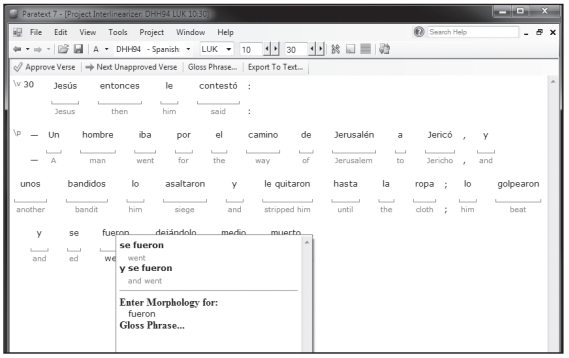

Figure 3. Correcting one of the initial guesses

An increasing number of translation projects are done by adapting an existing translation into a related language. The Project Interlinearizer can be used to adapt an existing translation, and can then export the text to another project, keeping all of the formatting and codes. In cases where the model and target languages are very similar, or in cases where the language has undergone a shift in spelling, the Project Interlinearizer will automatically start to learn the rules for adapting the word from one language to the other! It uses these rules to increasingly improve the quality of its guesses and thus improves the overall consistency of the adaptation.

Source Language Tool

The Source Language Tool provides quick and easy access to the Hebrew, Aramaic, Greek, and Syriac source language texts. It is now fully integrated into Paratext rather than being a separate program. It allows users to view a source text at the current verse, along with an interlinear gloss and morphological analysis of that verse. With the Source Language Tool, users can easily search the source texts, and see how a particular word is used in different parts of the Bible.

Print Draft

The new Paratext 7 Print Draft tool can quickly produce a formatted draft output of a project in PDF format. Basic publishing options such as page size, columns, margins, and fonts can be selected. It allows users to quickly view a rough draft of what the final printed Bible will look like, complete with footnotes and illustrations. Complex scripts and right-to-left languages are fully supported, as they are throughout Paratext. Print Draft does not require Microsoft Word or another word processor or publishing application to be installed on the user's computer.

Biblical Terms

The Biblical Terms feature is a tool containing a list of names, concepts, flora, fauna, rituals, and other words in the source text which are likely to require special consideration in translating. Each term can be examined to view the different ways in which it is translated in context, ensuring that translations are consistent and correct. The list includes words with important theological implications, such as the Greek and Hebrew words for "judgment," "righteousness," and "blessing." Paratext users can compare how the source word is translated across all verses, and help to ensure the linguistic and theological consistency of the translation.

The same statistical glossing engine that powers the Project Interlinearizer is also included in Biblical Terms to help make initial guesses for how the

biblical terms are rendered in the current project. This saves many hours of work and allows users to skip directly to the more important work of checking consistency.

Text Collection window

Another new feature is the Text Collection window, which shows the current verse of multiple texts in a clean, compact format. This allows users to quickly see and compare how the current verse is rendered in different translations.

Hyphenation

Paratext 7.1 includes a new hyphenation algorithm that makes initial guesses for hyphenation and then automatically improves itself by learning from users' corrections. All of this is done without the need to create complex rules. As a result, hyphenation is an intuitive and much more rapid process.

Wordlist

Paratext 7.1 features a completely redesigned and intuitive Wordlist tool, a single screen in which users can view and edit word morphology, hyphenation, spelling, and capitalization. Users can see where each word is used in context. It also provides flexible sorting and grouping options to look for easily mistaken words.

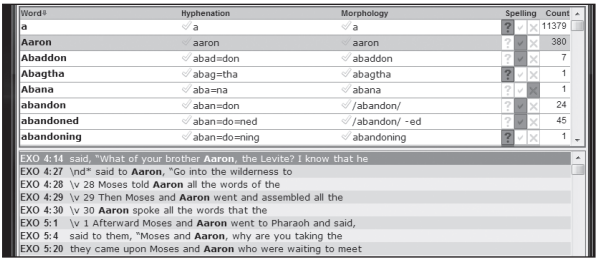

Figure 4. Wordlist tool

Spell Check

Paratext 7.1 has an innovative spell-checking tool that allows users to check the spelling in a text without first creating a list of correctly spelled words. Using a self-learning algorithm, Paratext is able to make intelligent guesses as to which words are spelled incorrectly and also to suggest a possible correction. It also guides users through checking words, starting with the ones it considers most suspicious, which maximizes the effectiveness of time spent improving spelling.

Parallel Passages

In Paratext 7.1 this tool gives access to two types of parallel passages, passages that occur more than once in either the Old or New Testaments, and OT quotes in the New Testament. If there are one or more parallel passages available for the current verse, this is indicated in the toolbar—the Parallel Passages button, which is normally greyed out, is enabled. If you click this button, the Parallel Passages window is displayed. If your project window was active when you clicked the button, the project text is displayed automatically. With the Comparative Texts... button in the Parallel Passages window you can add other resources to compare.

Identical words or phrases between the parallel passages are highlighted in green, whereas the yellow highlighting (available in the Hebrew and Greek source texts only) indicates related (but not identical) words or phrases.

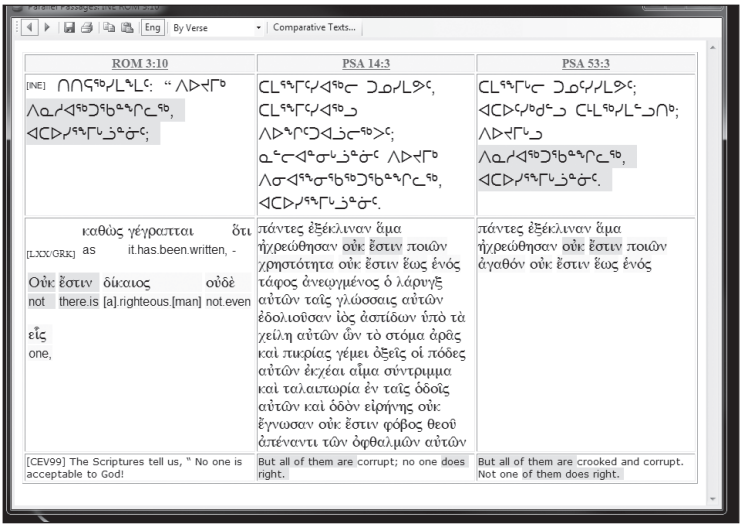

Figure 5. Parallel Passages tool showing highlighting

At the click of a button, you can choose to see the English glosses for the Hebrew/Greek source text, move to the previous/next parallel passage, or change the display. By default only the parallel passages for the current verse are displayed, but they can be displayed for the entire chapter or book instead. Finally, it is possible to save the parallel passage information as an HTML file, print it, or copy it to the clipboard.

Conclusion

User input in the development of Paratext may explain at least in part the overwhelming acceptance of this computer tool in the Bible translation community. The response to the new and improved features in Paratext 7 has been particularly positive to the extent that the skeletal crew supporting the tools has been stretched.

In addition to the features profiled in this article, users will find that a number of other features they are accustomed to from Paratext 6 have been updated and improved, features such as the Checking tools and the Compare Texts feature (which can now be set up as one window among many.)

In addition, most of the Paratext resource texts have been updated and several new resources have been added. To benefit from these updated resources in Paratext 7, users should update their resources, either from the Paratext website or from a Paratext 7 CD. Otherwise, users will be working with old versions of resources and miss out on the new versions that have been added. Some additions to the resources in recent years include the NET Bible, some French Handbooks, recently published English Handbooks, New Testament Background Notes by Craig Keener, and the New Living Translation.