

## The AGNT Project Report—Q2 2022

As a licensee or friend of AGNT or ANLEX, we would like to update you once a quarter about our continuing work to enhance and perfect these databases and about our plans for the future.



**The Project.** *The AGNT Project Report—Q3 2008* introduced the team, outlined ongoing tasks, and discussed potential tasks.



### CC Consistent Changes Tool Used in ANLEX Highlighting Development

Alan Buseman

#### Background by Timothy Friberg

Over the past several years these newsletters have described the work we are doing to tag AGNT and ANLEX so that with the cooperation of our Bible software vendors each English reference gloss (ERG) in AGNT will eventually be able to be viewed as highlighted in the relevant ANLEX write-up.<sup>1</sup> In other words, rather than having to read through a complete lexical write-up, users will be able to see the specific location in that write-up that pertains to the selected AGNT reflex. By seeing the exact ANLEX source of the ERG used in AGNT, users will be able to review ANLEX's larger lexical write-up far faster, which will aid them in evaluating various translation options. To achieve that goal, we are working hard to process the roughly 140,000 reflexes in ANLEX's approximately 5,820 lexical write-ups, which cover our NA28, GNT5, WH, and BYZ databases.

Briefly stated, a lexical write-up or entry in ANLEX can be as short as a single line or as long as scores of lines that include many glosses. When implemented, selecting a given word in AGNT will highlight in ANLEX the gloss in the corresponding write-up that we believe best fits that specific word, and it will highlight in a different color the definitional input for that gloss. Users will be able to scroll up and down to display the entire entry.

As a complement to Alan Buseman's presentation about CC Tables below, using these requires identifying two things for each reflex: its specific gloss and its corresponding definitional data set. This is done by identifying the precise location of the items to be highlighted by ascertaining their exact location in the write-up.

The highlighting is put into a panel where all the numbered tags are indicated. It is these ordinal tags, where relevant, that get put into a digital formula, giving the start-stop information in two colors. As Alan will describe, these tags were once determined by using a complicated Microsoft Word macro, but it proved too onerous to modify that macro each time we revised a write-up. Alan's contribution makes it easier for us to achieve our goal.

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<sup>1</sup> See, for example, Timothy Friberg, "Tagging ANLEX and Pointing AGNT," *AGNT Project Report Q3 2016*.

These digital formulas are then added as their own fields to the AGNT database record of relevant Greek reflexes so that any vendor can come along and display the highlighting desired by using his own proprietary software for the database version being used.

### Consistent Changes

The CC (Consistent Changes) tool is one of the tools in the Toolbox (Field Linguist's Toolbox) program. Toolbox has been heavily used for many years in the editing and updating of AGNT and ANLEX. We have recently started to use the Consistent Changes tool in the ANLEX highlighting development.

ANLEX highlighting is done by putting highlighting formulas into the AGNT information on each word. The formulas say which words in the ANLEX entry for the word should be highlighted for the AGNT word. The formulas refer to word numbers in the ANLEX entries. The numbers are of the form \*1\*, \*2\*, with an asterisk before and after the number.

We used to put word numbers into ANLEX entries using Word Macros. But the macros were slow and put some of the numbers in the wrong places. So we have now built a new process to put numbers into the ANLEX entries. This process uses the CC Consistent Changes tool from Toolbox.

Consistent Changes is a powerful text processing tool that can do a wide variety of text manipulations. It works from a file called a Consistent Changes Table that says what it should do. The table contains a list of things it should look for, and says what should be done at each thing it finds.

For example, the main thing the ANLEX numbering process does is to put a number at each space in the ANLEX entry. So the Consistent Changes Table says that when it sees a space, it should add one to the current number, and output the number with asterisks before and after it.

Putting out a number at every space is easy with Consistent Changes. But there are a variety of places where not every space gets a number. In particular, Scripture references contain spaces, but should not have numbers inside the reference. For example, MT 1.1 should be numbered as “\*1\*MT 1.1 \*2\*”. It should not be numbered as “\*1\*MT \*2\*1.1 \*3\*”. For a simple reference like this, there is never a reason to highlight the book abbreviation and not highlight the chapter and verse reference. Similarly, there is never a reason to highlight the chapter and verse reference and not highlight the book abbreviation.

Consistent Changes is very powerful at handling exceptions. So it can say that whenever it finds a book abbreviation, it should not put out a number until after the chapter and verse reference.

But it turns out there are exceptions to that way of handling reference numbering. Sometimes a reference can have multiple chapter and verse references from the same book. So we might have a reference like “MT 1.1; 2.1”. For that reference, it is not enough to have numbers at the beginning and end of the reference. We will want to highlight the book abbreviation and just one of the chapter and verse references, not both. So to make that possible we have to put in extra numbers as “\*1\*MT \*2\*1.1; \*3\*2.1 \*4\*”.

Numbering gets even more complicated when there are situations where a reference contains multiple verses from a single chapter. For example, “MT 1.1, 2”. The correct numbering of that reference requires a number before the verse number, where there is no space. It must be numbered as “\*1\*MT

1.\*2\*1, \*3\*2 \*4\*”. This allows a formula to highlight the book abbreviation and the chapter number, and then to highlight only one of the two verse numbers.

There are also complications with references like “MT 1.1WH, NA”. That reference should not have a number at the space before “NA” because the whole reference will always be highlighted as a single unit.

The most complicated references contain multiples of these complications. So to correctly place the numbers the Consistent Changes Table has a long list of exceptions and complicated combinations of situations.

It took significant time and effort to get the whole new Consistent Changes Table numbering system working correctly. But now it seems to put all the numbers in the right places. It runs faster than the old Word Macro, and it works correctly where the Word Macro used to put numbers in the wrong places. So we are very pleased with this improvement.

For more information about Toolbox and Consistent Changes, see [www.fieldlinguisttoolbox.org](http://www.fieldlinguisttoolbox.org).

## CC Consistent Changes Tool Used to Change Beta-Coded Greek to Unicode Greek

John Hughes

Not long ago, I needed to change all the Beta-coded Greek in several large Word files to Unicode Greek. I contacted SIL’s Christopher Samuel, and he kindly wrote a Consistent Changes Table for this task.

“Beta Code is a method of representing, using only ASCII characters, characters and formatting found in ancient Greek texts (and other ancient languages). Its aim is to be not merely a romanization of the Greek alphabet, but to represent faithfully a wide variety of source texts—including formatting as well as rare or idiosyncratic characters.

“Beta Code was developed by David W. Packard in the late 1970s and adopted by Thesaurus Linguae Graecae in 1981. It has become the standard for encoding polytonic Greek and has also been used by a number of other projects such as the Perseus Project (which encodes all its Ancient Greek texts using Beta code), the Packard Humanities Institute, the Duke collection of Documentary Papyri, and the Greek Epigraphy Project at Cornell and Ohio State University. Beta Code can be easily converted to a variety of systems for display, most notably Unicode. Systems such as Sophokeys for typing Beta Code but producing Greek glyphs directly in the entered text (rather than when it is typeset or otherwise output) are increasingly popular, with the result that Beta Code, with some variations, has become a sort of universal default keymap for text entry in polytonic Greek.”<sup>2</sup>

Here is what a section of one of my files looked like prior to using the Consistent Changes Table that Christopher wrote. The Beta-coded Greek is between the tags <GRK> and </GRK>.

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<sup>2</sup> [https://en.wikipedia.org/wiki/Beta\\_Code](https://en.wikipedia.org/wiki/Beta_Code).

Cremer, *Biblico-Theological Lexicon of New Testament Greek*, 2nd ed., E. T., Edinburgh, 1878:

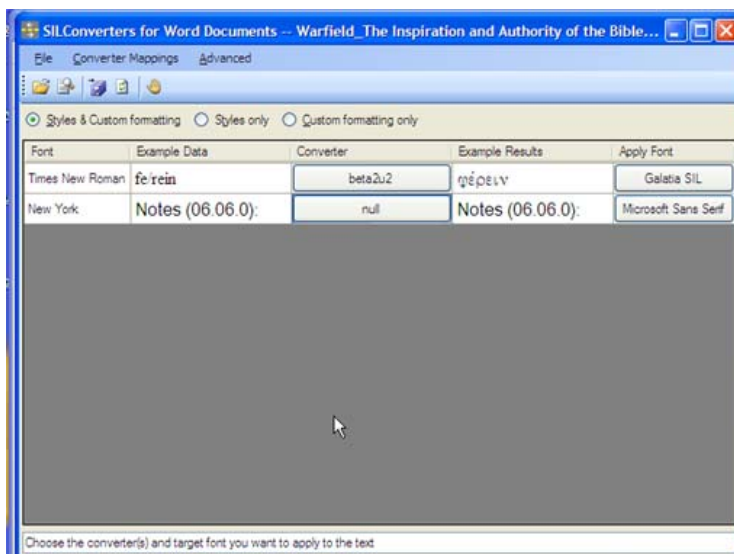
“<GRK>qeo/pneustov</GRK>, prompted by God, divinely inspired. II Tim. iii. 16, <GRK>pa=sa grafh\ q</GRK>. In profane Greek it occurs only in Plut. *de placit. philos.* v. 2, <GRK>o/neiroi qeo/pneustoi</GRK> (<GRK>kat’ a)na/gkhn gi/nontai</GRK>), opposed to <GRK>fusikoi</GRK>. The formation of the word cannot be traced to the use of <GRK>pne/w</GRK>, but only of <GRK>e)mpne/w</GRK>. Cf. Xen. *Hell.* vii. 4, 32, <GRK>th\ n a)reth\ n qeo\v me\ n e)mpneu/sav</GRK>; Plat. *Conv.* 179 B, <GRK>me/nov e)mpneu=sai e)ni/oiv tw=n h(rw/wn to\ n qeo/n</GRK>; Hom. *Il.* xx. 110; *Od.* xix. 138. The simple verb is never used of divine action. How much the word corresponds with the Scriptural view is evident from II Pet. i. 21.”

Here are the steps I went through on my end to use the Consistent Changes Table on my files.

(1) All the text in my files was in a dummy font called “New York.” The Beta-coded Greek needed to be in a different font so that the Consistent Changes Table (each CC table is also called a “converter”) only changed text in that font to Unicode Greek. With on of my files open, I ran this Word wildcard search-and-replace routine to change all the characters between the <GRK> and </GRK> tags to Times New Roman:

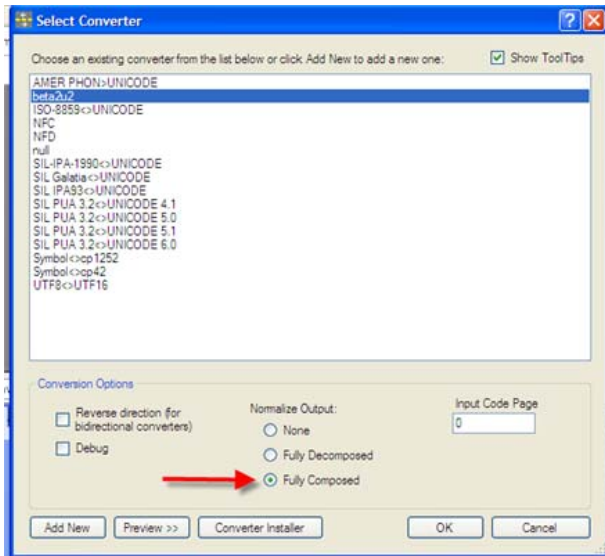
**Find:** \<GRK>\(?{1,250})\</GRK> **Replace:** \1 + Times New Roman.

(2) Next, I launched the SIL Bulk Word Document Converter<sup>3</sup> and selected my Word file. This program listed two fonts in my file—Times New Roman and New York—and showed samples of each one. I selected a converter for each font: “beta2u2” for Times New Roman and “null” for New York. “Beta2u2” converts all Times New Roman text to Unicode Greek text and puts the results in the selected font Galatia SIL “Null” does not make any changes.



<sup>3</sup> <https://software.sil.org/silconverters/>.

(3) The Beta2u2 converter uses Fully Composed characters, an option that can be selected here:



(4) Having correctly configured the SIL Bulk Word Document Converter for my task, I ran the program and saved converted file.

The Greek in the resulting file looked like this:

*Cremer, Biblico-Theological Lexicon of New Testament Greek:*<sup>8</sup>

θεόπνευστος, *prompted by God, divinely inspired.* 2 Tim. 3:16, πᾶσα γραφή θ. In profane Greek it occurs only in Plut. *de placit. philos.* 5:2, ὄνειροι θεόπνευστοι (κατ' ἀνάγκην γίνονται), opposed to φυσικοί. The formation of the word cannot be traced to the use of πνέω, but only of ἐμπνέω. Cf. Xen. *Hell.* 7:4, 32, τὴν ἀρετὴν θεὸς μὲν ἐμπνεύσας; Plat. *Comv.* 179 B, μένος ἐμπνεύσαι ἐνίοις τῶν ἡρώων τὸν θεόν;<sup>9</sup> Hom. *Il.* 20:110; *Od.* 19:138. The simple verb is never used of divine action. How much the word corresponds with the Scriptural view is evident from 2 Peter 1:21.

Christopher also wrote a converter that changed outdated citations like this—John iii.16—to properly formatted citations like this: John 3:16. His converters were tremendously helpful for my tasks, and I am grateful for his help.

SIL's Bulk Word Document Converter, used in combination with specific converters (CC tables), is a powerful, fast, easy to use, time-saving tool.



As always, we remain open to developing AGNT and ANLEX in ways that are most useful to the needs of students and readers of God's Word.

Thank you for your continued support of *The AGNT Project*, for faithfully marketing the AGNT and ANLEX databases, and for making these state-of-the-art tools for studying the Greek New Testament available to students, scholars, pastors, translators, and laymen worldwide.

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