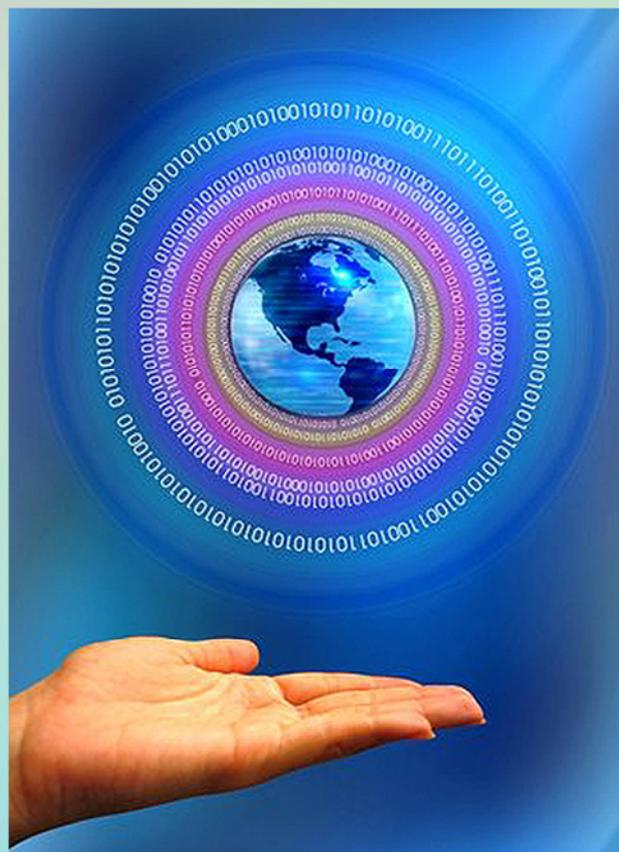


PROCEEDINGS OF THE IADIS INTERNATIONAL CONFERENCE

INTERNET TECHNOLOGIES & SOCIETY 2010

29, 30 November and 1 December 2010

Perth, Australia



Edited by
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FROM DOS TO UNICODE – A LITERATURE REVIEW AND A SYRIAC (ARAMAIC) STANDPOINT

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ABSTRACT

This paper aims at presenting a Syriac (Aramaic) viewpoint of the reposition of such an ancient language from a Disk Operating System 'DOS' to 'UNICODE'. This is of importance especially when this relates to adopting technology to the Ancient Classical Syriac (Aramaic), especially with the scholars claims that this language is the most ancient amongst the world languages, and consider it as one of the oldest with its characteristic, unique and original way of writing that started on tablets of clay. Syriac (Aramaic) is one of the Semitic tongues in which parts of the Holy Bible, such as the Prophecy of Daniel and the Gospel according to St. Matthew were revealed. Syriac (Aramaic) was the lingua franca of the area from Middle East to China; in a manner as Latin was the lingua franca of Old Europe. Syriac (Aramaic) was once spoken across much of the Fertile Crescent, and here lies the challenge to develop the script and font of such an ancient language and establish that marriage between the ancient world and the most modern technology.

KEYWORDS

Unicode, DOS, Syriac (Aramaic) Language, Fontrix, Semitic Languages

1. INTRODUCTION

It is interesting to witness the transformation of recording the ancient language originated in Mesopotamia the writing of which started on tablets of clay, into using the latest technology to communicate in this ancient language. There is a belief that the understanding among the Sumerians the god Enlil was the creator of writing. Later during Assyrian, and Babylonian periods, the god Nabu was credited as the inventor of writing and scribe of the gods. And similar to Thoth, Mesopotamian scribal gods also exhibit the power of creation via divine speech (Ancient Scripts 2010). In support of this, and according to the Encyclopaedia Britannica (2010) Aramaic is thought to have first appeared among the Aramaeans about the late 11th century BC. By the 8th century BC it had been accepted by the Assyrians as a second language. The mass deportations of people by the Assyrians and the use of Aramaic as a lingua franca by Babylonian merchants served to spread the language and provided it with its importance. Aramaic was used as the 'Lingua Franca' of Achamaenian Empire that initiated the process by which the Aramaic alphabet finally reached the Mongols and Manchus (Barsoum 2000; Driver 1954). Driver goes on to state it would seem that Aramaic played the same role in the Achaemenid Empire as in the Assyrian; only in the former, writing on clay had declined in favour of an alphabetic script written on parchment or papyrus, which is only to be expected. This language was then adapted by the Christian Aramean (Syriacs), who have been since then using this language in their prayers, in their communications and currently continue to use this language that is coupled with the languages they became familiar with, as they are currently spread in the Diaspora (Brock & Taylor 2001) in their new countries. Thus, having such an ancient, yet contemporary language preserved through the use of technology is a major shift. It is pleasing to witness this language being recognised as one of the universal languages where its alphabets and fonts are part of the technological writing 'UNICODE' (Unicode 2009).

The earliest writing of Syriac (Aramaic) in Mesopotamia started on clay that was named 'Cuneform' tablets. There is evidence at the University of Pennsylvania Museum of Aramaic docketts and seal impressions of Darius II of Persia (Bromiley 1988). This evidence reflects the ancient nature of this language, and with such a nature, complexities are inevitable, these are in the form of the language grammar,

syntax, and paragraphs formation. In this respect, even Bar Hebraeus (1983, p.2), who is considered one of the most important scholars in the Syriac (Aramaic) modern linguistic heritage (Barsoum 2000), expressing his relief, he thanks God the Almighty that he had reached and came to understand the brilliant Syriac (Aramaic Language).

Deriving from Gelb, (1963), Naveh (1982), and Daniels and Bright (1996), O'Connor (2010) provides an account on the history of Syriac (Aramaic) script, stating that the unique Aramaic script that was first developed in the mid eighth century B.C. By the year 700 B.C. this ancient language 'Aramaic' was the most important and most used language of the region; being adopted by empires. For example, the Persian Empire, established in the mid-sixth century, adopted it as its official language (O'Connor 2010). As highlighted in the literature, Aramaic script continued its dominance over a wide area, long after the collapse of the Persian Empire. The post-imperial history of script includes, in addition to Jewish scripts, Nabatean script (from which Classical Arabic script developed), Syriac script (still used among eastern Christians), as well as scripts used in Iran and later diffused to South and Central Asia. The many modern South and Southeast Asian alphabets are descended from Aramaic (O'Connor 2010). In yet another evidence of the prestigious history of this ancient language, Brock and Taylor (2001) in their publication the 'Hidden Pearl' that aimed at retracing the rich heritage of the Aramaic-speaking peoples, with their culture, language and traditions posit that during the course of the three millennia of the Aramaic history this language and its native speakers played a major cultural role in the Middle East, bridging the time-span between Ancient Mesopotamia and the birth of Arabic and Islamic era and time. Brock and Taylor (2001) conclude, as a result of political vicissitudes, however, these peoples are now to be found scattered all over the world, as Diasporas in many different countries. Despite this, the Aramaic language, and despite being ancient continues to thrive especially with enthusiastic volunteers, who either solely or in co-operation with other major software developers are endlessly seeking to ensure that this language is recognized amongst modern and contemporary languages, by exerting efforts to bring it forth with the use of latest technology.

2. SYRIAC IN THE DOS ERA – A HISTORICAL ACCOUNT

It is hard to pin point exactly when was the first step in employing computer to Syriac (Aramaic) language. According to Kiraz (2007), in the 1960s someone at University of California, Los Angeles (UCLA) had encoded Brockelmann's Lexicon Syriacum on a mainframe computer system. In mid 80's and with the introduction of personal computers (PC), several enthusiasts and lovers of this language, and through their enthusiasm spent their own time developing a novel method to allow the adaptation of the PC to meet the requirements of writing Syriac, which entails amongst its several challenges from which we point the major two. First, the change in the cursor direction from the right to the left. As a Semitic language, the Syriac script and contrary to the standard PC language (English), is written from right to left. The second was the "contextual analysis"; i.e. the shape of the character with respect to its position in the word. For example, if 'beth' , which is the second character in the Syriac alphabets, happens to be the first character in the word it will appear like this . However, if this same character appears in the middle of the word it appears like this  and at the end it appears like this  Hence the challenge faced by those enthusiasts to write the necessary script to accommodate these positions and their diversities.

Tackling the above two major challenges, there were two paths to choose from. The first was the Syriacization of the whole Disk Operating System 'DOS'. This is simply to apply a low level language (assembly) programme, which stays as a resident program in the memory, that controls all the processes within the operations with the help of the DOS, yet the main function of this program is to flip the cursor to the right, allowing the user to extract the Syriac character that have been already installed in the ASCII table from 128-255 to be in use. Nonetheless, this seemed to be a time-consuming, resource-demanding and unsustainable exercise, thus, second path was chosen. This second path was to locate a software which is compatible with multilanguages (multi-lingual) including the ability to accommodate the Semitic languages. Due to limited financial resources, the affordable option was the software "FONTRIX" by Data Transform, which has a graphic writer that allows the user to type a text with different fonts that was created using the included font editor. Being a graphical editor, that allowed the cursor to move from right to left in addition to left to right, thus we produced a Syriac font in Fontrix with the help of our father V. Rev. Fr. Boutros Touma Issa, the help and patience of Issa family members, using this font to print church banners in Syriac back in

1986. To follow are two examples of how the writing in Syriac looked like using FONTRIX. These two figures represent (1) the statement in the name of the Father, the Son, the Holy Spirit, Amen, (2) the name 'Jesus Christ'.

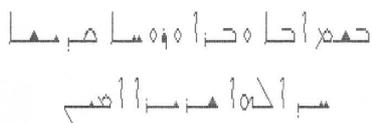


Figure 1. Fontrix in Syriac developed by the third author of the statement: 'In the name of the Father, the Son, and the Holy Spirit - Amen (1986)



Figure 2. Fontrix in Syriac developed by the third author of the name: 'Jesus Christ' (1986)

While this was extremely helpful, and similar to our wildest dreams coming true for such an ancient language alphabets and characters to be printed through the use of the most modern technology at the time. Nonetheless, it seemed to be limited in its usage, thus efforts were exerted to incorporate and innovate other ways of developing the Syriac character with the use of technology. At this stage, and through the ongoing development in the software the Multi-Lingual Scholar (MLS) from Gamma Productions with Aleph Beth Font Kit 'A Syriac Package', came to the attention of several volunteers including us. This package, and with its own typographical rules had the ability to apply to the language that is being typed, accommodating the Semitic languages in addition to English as the main language. This seemed to be much easier than the 'FONTRIX'. This PC-based system became the only uncontested multi-lingual word processor; even books in Syriac were printed using this software. With such a development, those enthusiasts kept on working, and once again, another central development took place with the introduction of the graphical user interface under 'windows operating system', the true type fonts 'TTF' became available. This, was considered as yet another major step, boosted with the enthusiasm of volunteers interested in developing the Syriac language interface with the PC, fonts, using TTF, were developed. This was done with the help of a simple utility under the name of RTL "RTL is a freeware keyboard utility that allowed fairly sophisticated character entry in most Windows 9x/NT applications". This domination prevailed until the time when Microsoft released its multi-lingual operating systems Windows 2000. With this new development, 'UNICODE' allowed the representation of 65,000 unique characters instead of the original 255 which limited the activities in developing Syriac fonts – thus, Syriac (Aramaic) language found its way to the keyboard languages list with the Syriac Range now covering 0700–074F (Unicode 2009). It is worthwhile to note here that the Syriac 'UNICODE', was a voluntary work of Paul Nelson, George Kiraz and Sargon Hasso amongst other enthusiasts who were developing and working in silence using their developments for their regional church's purposes, while monitoring other developments. The Syriac Computing Institute (SyrCOM) of Beth Mardutho provides Meltho, which can literally be translated from Syriac (Aramaic) as 'WORD'. This 'Meltho' is a Syriac Open Type Fonts for Windows XP/2000, which is distributed free of charge (Beth Mardutho 1992). The following two figures provide a representation of the same words included in figure 1 and 2 above, but these two figures (figure 3 and 4) were generated using the new platform with Meltho fonts. A quick look and comparison of these four figures would provide a clear indication as how far the development of these fonts has gone. Work continues on with the assistance of major software developers like Microsoft (2010) to keep the Syriac (Aramaic) language alive with the ongoing never-ceasing developments of software. It is of great importance to have such work progressing, as keeping an ancient language such as Syriac (Aramaic) that was the language spoken by Our Lord Jesus Christ (Barsoum 2000), alive throughout the ages. Most importantly, with the use of technology, such language would continue to be alive, reducing the risks described by (Beck 2002) who contends that in 10,000 years we will not be able to establish conversations or pass on information to the future generations, as any language in use at this stage will not be understood then. Beck (2002) is of the opinion that there have been languages that survived for 2,000 or 3,000 years, but never 10,000 years. This is a challenge and a major risk, and with the use of technology, this challenge might be met with regards to the Syriac (Aramaic), and the risk might be averted.

Figure 3. 'In the name of the Father, the Son, and the Holy Spirit – Amen using Meltho Fonts in Microsoft Office under Windows XP (2002)

Figure 4. 'Jesus Christ' - using Meltho Fonts in Microsoft Office under Windows XP (2002)

3. CONCLUSION

In conclusion, this paper had provided a brief historical background of such an ancient language, the Syriac (Aramaic) language, and provided a succinct understanding of the efforts exerted mainly by 'enthusiastic volunteers' who maintain the love of their native tongue in their hearts, souls and minds, in co-operation with major software development (e.g. Microsoft) to bring this ancient language into the ranks of contemporary languages. It is with pleasure to trace the actions of such volunteers. This is remarkable, and it is crucial, especially with this Syriac (Aramaic) speakers scattered around all continents, and continue to be eager to hold dear to their hearts their mother tongue Syriac (Aramaic) coupled and in conjunction with their full integration in the new nations that they now call 'home', keeping their heritage, while learning and adopting to the new way of life in their new countries, and continents. This paper is a minimal participation yet an important step in recording the modern history of such an ancient language. Further studies and historical recordings are called for to keep our future generations aware of the developments in this ancient language, and exerting the effort to avert the risk described by Beck (2002) for the whole civilized nations.

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