

MULTILINGUAL COMPUTING WITH ARABIC AND ARABIC TRANSLITERATION
Arabicizing Windows Applications to Read and Write Arabic
&
Solutions for the Transliteration Quagmire Faced by Arabic-Script Languages

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Abstract²

A major obstacle in the teaching of Arabic as a foreign language has been the dearth of technological resources available for both teacher and student. This paper is the first step in filling this niche by providing the average computer user the ability to access Arabic on the Internet and to word process in Arabic and Arabic transliteration systems, irrespective of their current computer operating system and software versions. The ability to word process in Arabic and Arabic transliteration just as one would in English is now available in universal technologies such as Microsoft Word, thus obviating the need to purchase a stand-alone Arabic word processor or utilize a distinct Arabic transliteration program or font. Thus universal and comprehensive access to Unicode-compliant Arabic and Arabic transliteration fonts on the home user's word processor, e-mail programs, and the Internet—if utilized judiciously—can 1) quicken the path to proficiency for non-native learners of Arabic; 2) widen the distribution of Arabic-based scholarship among universities around the world; and 3) expedite the production of said scholarship by scholarly publishing presses.

Introduction

This paper is technical in nature.³ It provides detailed instructions for enabling reading and typing Arabic and Arabic transliteration capabilities within PCs running:

- all Microsoft Windows operating system versions,
- the most common versions of Microsoft Word and WordPerfect, and
- Internet web browsers such as Netscape Navigator, Mozilla, and Internet Explorer.⁴

This paper also discusses useful, time-tested hints and resources for typing and editing Arabic and Arabic transliteration within Windows and the Web including:

- enabling the free On-Screen Arabic Keyboard,
- installing the free Arabic Visual Keyboard,
- purchasing Arabic keyboard stickers (AKA overlays or keytop labels),
- purchasing English/ Arabic keyboards,
- defining Arabic keyboards for Arabic language fonts and Arabic transliteration fonts,
- installing a free Arabic QWERTY/ phonetically defined keyboard,
- extending support of Arabic to all programs in Windows,
- typing non-Roman fonts, like Arabic, right-to-left in most versions of Microsoft Word,
- detecting the Arabic language automatically in Microsoft Word,
- enabling the Arabic Proofing Tools,

- typing Hindi and Arabic numbers,
- smoothing Arabic screen fonts,
- moving the footnote separator from the left side of the page to the right side of the page,
- finding and installing free Arabic fonts,
- finding and installing free Arabic transliteration fonts,
- using one font as the default English, Arabic, and Arabic transliteration font in MWord, and
- freely and efficiently sharing Arabic documents with other users as PDF files.

Step 0a: How can I tell if what I am reading is the most recent version of your paper?

Those generally interested in the field of multilingual computing will benefit from this article, which is my most recent (February, 2006) version. The most recent versions of this article are hosted in HTML and in PDF formats at <http://www.uga.edu/islam/arabic_windows.html> and <<http://www.nelrc.org/readings/inst-arabic3.pdf>>, respectively. The University of Chicago has also been gracious enough to host the most recent version of my article at <<http://www.lib.uchicago.edu/e/su/mideast/>>. Be sure to check the above three sites for the newest version of this article if you are reading this one well beyond 2005.

Step 0b: Don't you think this article would be more effective if it was accompanied by pictures or computer-screen shots?

Of course it would be! For this reason, I have created a PowerPoint Presentation based on the steps in this article. The 45-minute slide show is a tutorial on Arabicizing your PC. It includes dozens of computer-screen shots in addition to my voice-over illustrating major steps of this article in detail based on the Windows 2000 operating system (OS), Microsoft Office 2003 (11.0), and Internet Explorer 6.0. This popular 26 megabyte PPT file is now available for download from the University of Chicago library web site: <<http://www.lib.uchicago.edu/e/su/mideast/>>. You can save the file to your desktop by right clicking on the next link below and choosing Save Target As (in EI) or Save Link As... (in Mozilla), or you can open the file directly by left clicking on the next link: <http://www.lib.uchicago.edu/e/su/mideast/multilingual_computing_arabic.ppt>.

Step 1: Should I enable Arabic in Windows, Word, or both?

The version of the word processing program on your computer plays a central role in the level of ease with which you can effectively work in Arabic. During the early days of Windows, one was required to enable their operating system with Arabic by purchasing additional Windows software and installing it over their current Windows version. When Microsoft began supporting right-to-left non-Roman fonts within their flagship program, Microsoft Word, it no longer became necessary to enable an operating system for Arabic, since one could simply enable Word for Arabic and not the entire Windows operating system.

Thus it is possible to have an older Windows operating system running a newer version of Word, and be able to type in Arabic within Word and the Internet only, but not within other programs. For example, it is possible to run Microsoft Word 2000 within the Windows 98 operating system and successfully word process in Arabic as well as read and type in Arabic on the World Wide Web.

Luckily for new PC owners, the newest versions of Windows come with Arabic scripting enabled, *and* the newest word processing programs also come Arabic-enabled. This combination

makes for seamless right-to-left Arabic scripting in various Windows applications, including but not limited to Microsoft Word, Microsoft PowerPoint, Microsoft Publisher, Microsoft FrontPage, Microsoft Outlook, Microsoft Excel, WordPerfect, Eudora, Internet Explorer, Mozilla, and Netscape Navigator.

Step 2: How to determine the version of your Windows operating system⁵

I strongly encourage those who are reading this paper and are not computer savvy to download and view my PowerPoint Presentation from <<http://www.lib.uchicago.edu/e/su/mideast/>>. This popular 26 megabyte PPT file is a multimedia tutorial that includes computer screen shots in addition to my voice-over that illustrates the major steps of this article in detail.

Arabic works seamlessly in the newest versions of Windows: Windows XP and Windows 2000. To determine which Windows operating system you are running on your PC, begin by right clicking on My Computer from the Desktop. Scroll down the dialogue box and left click on Properties. Left click the General tab on the top left of the box that appears. Under System, read about your computer operating system. If your operating system is Microsoft Windows ME, Windows 2000 Professional, Windows XP Home or Windows XP Pro, then continue to **step 3a**.⁶

If your operating system is Microsoft Windows 98 or Windows 98 SE, then the instructions below will aid you in adding Arabic to Windows. You should note however, that some items will appear differently and some functions will operate differently than the same items in newer versions of Windows. I have discussed many of these differences at length below. Continue to **step 3a**.

If your operating system is Microsoft Windows 95a, Windows 95b, or Windows 95c your Windows operating system does not come enabled with Arabic support. Therefore you will need separate program CDs or disks (apart from the Windows and Office CDs) to either arabicize your entire Windows operating system or simply your word processing program, depending upon your specific computing needs. Contact an information technology (IT) specialist to help you in this regard.

Step 3a: How to determine the version of Microsoft Word or WordPerfect

To determine the version of your word processing program, open the program you use to write most of your documents. You should see the word Help on one of the toolbars at the very top-middle of the page. Left click on Help and left click again on the item in the menu labeled About X, where X represents the program you are using. About X is usually one of the very last options available in the menu. After left clicking on About X, a box will appear that tells you the precise version of your word processing program.

Microsoft has recently released its newest office suit, **Microsoft Office 2003**. Word 2003 (within Office 2003) bests all prior word processing programs with respect to reading and writing Arabic script. The below web site details what's new for Arabic in Office 2003 in addition to extra on-line Arabic features: <<http://www.microsoft.com/middleeast/arabicdev/office/>>. If you are considering upgrading to Office 2003, which I highly recommend, be sure to read the section titled **Arabic Proofing Tools in Office 2003** found by left clicking the first link in the above site. Note that the Microsoft Office 2003 Proofing Tools CD must be purchased separately from Microsoft Office 2003 CDs and can be found here for direct purchase:

<<http://www.microsoft.com/products/info/product.aspx?view=22&pcid=071b9ced-ed82-47ef-b5fa-a42ecbdec9b7&type=ovr>>.

When composing and editing in Arabic, it is my experience that Microsoft Word 2003 (AKA Microsoft Word 11) functions more smoothly than Microsoft Word 2002 (AKA Microsoft Word 10 or XP), which functions more smoothly than Microsoft Word 2000 (AKA Microsoft Word 9). For example, two common problems experienced by Microsoft Word 2000 users are static Arabic font sizes and the lack of Hindi numerals. These features have been corrected in Microsoft Office 2003 (AKA Office 11). In fact, Word 2003's Arabic bidirectional dictionaries, Arabic thesauri, and Arabic spelling, grammar, and style checkers are more stable and more comprehensible than those in previous versions of Microsoft Word. In addition, Microsoft Office 2003's Arabic capabilities are currently better than anything WordPerfect has to offer.

Likewise, WordPerfect 12 is friendlier to all things Arabic than WordPerfect 10 (AKA WordPerfect 2002) and WordPerfect 9 (AKA WordPerfect 2000). I do not advise using Arabic with earlier versions of either Word or WordPerfect while also running Windows 95 unless you have Microsoft Word Arabic 6.0 installed. But that's another story.

If you own an older version of either of these word processing programs, my advice is to upgrade, provided your computer has the memory and physical space to run a newer word processor. If an upgrade is not possible, then consult with an IT specialist on what your system may require in order for you to read Arabic and type in Arabic.

Step 3b: How to enable Windows to read Arabic script/fonts⁷

Before continuing, have your Microsoft Windows and Office CDs on hand should you need to install extra components not previously installed.

3b.i. For **Windows XP Home** and **Windows XP Pro** users, follow these instructions. Left click on Start. (Left click on Settings.) Left click on Control Panel. Double-left click on Regional and Language Options. Left click on the Regional Options tab on the top of the box that appears. Keep the Standards and Formats as English (United States). Left click on the Languages tab at the top of the box. Under Supplemental Language Support, tick the box that says Install Files for Complex Scripts **and** Right-to-Left Languages (including Thai). Now click the Apply button located on the bottom right of the box. Wait while your computer installs the files needed. Insert the Windows XP CDs if requested to do so. Click the OK button located on the bottom left of the box to complete the process. Restart your PC if requested to do so.

3b.ii. For **Windows XP Home** and **Windows XP Pro** users who want to access Arabic programs on CD-ROMs purchased from vendors of Arabic dictionaries and Arabo-Islamic literature, follow these instructions. Left click on Start. (Left click on Settings.) Left click on Control Panel. Double-left click on Regional and Language Options. Left click on the Advanced tab at the top of the box. Under Language for non-Unicode Programs, select an Arabic language to match the language version of the non-Unicode programs you want to use. It does not matter which Arabic-speaking country you choose. You will see quite a few varieties of Arabic listed. These country specific versions of Arabic do not reflect any dialectical differences that may be enabled on your keyboard. Since no differences exist in the country choice, you may choose whichever country you wish that is labeled as Arabic.

By choosing Arabic as your non-Unicode program language, your computer will automatically convert the font into Arabic for any program you put in your CD-ROM that is built with a non-Unicode font, which includes most of the Arabic and Islamic CD-ROM programs that are available on the market.

3b.iii. For **Windows 2000 Professional** users, follow these instructions. Left click on Start. Left click on Settings. Left click on Control Panel. Double-left click on Regional Settings. Left click on the tab labeled General at the top of the screen that appears. Keep the Your Locale (Location) as English (United States). On the same screen, under Language Settings for the System, tick the Arabic box. Now left click on the Apply button located on the bottom right. If your operating system needs additional files to run this function you will be asked to insert the necessary CDs. If these files have already been installed on your operating system, they will self install. You may be requested to restart the computer. Do so.

3b.iv. For users of **all other versions of Windows**, abide by what follows. Left click on Start. Left click on Settings. Left click on Control Panel. Double-left click on Keyboard. Left click on the tab labeled Language at the top of the screen that appears. To add Arabic, left click on Add and scroll down to find Arabic. If Arabic does not appear, then you must install this language from the Windows CD or from the Windows Setup function within Add/Remove Programs, depending on how your system was originally configured.

Before giving up, **users of all other versions of Windows** should attempt the following. Left click on Start. Left click on Settings. Left click on Control Panel. Double-left click on Add/Remove Programs. Left click on the tab labeled Windows Setup. Scroll down the list of options. Tick the following boxes: Accessibility and Multilanguage Support. Left click on the Apply button. If you are asked to insert the Windows CDs, do so. Restart the computer. Now return back up to the previous instruction set and try enabling your PC to read Arabic again. If the above instructions fail to enable your PC to read Arabic, continue to **step 4** anyway for more solutions.

Step 4a: How to enable Windows XP Home and Windows XP Pro users to type in Arabic

For Windows XP Home and Windows XP Pro users, follow these **five** instructions.

4a.i. Left click on Start. Left click on Control Panel. Double-left click on Regional and Language Options. Left click on the Languages tab at the top of the box. Under Text Services and Input Languages, left click on the Details... button. Left click on the Settings tab at the top of the box that appears. Under Installed Services left click on the Add... button on the right. An Add Input Language Box should appear. Add Arabic. You will see quite a few varieties of Arabic listed. These country specific versions of Arabic do not reflect any dialectical differences that may be enabled on your keyboard. Since no differences exist in the country choice, you may choose whichever country you wish that is labeled as Arabic.

4a.ii. In the same box, directly under Input Language, there is an area for selecting a Keyboard Layout from a drop-down menu. Scan the menu for an Arabic keyboard.

4a.iii. There are minor differences in the keyboard layouts available from Microsoft. The keyboard you choose will determine which Arabic letters correspond to the English letters on the keyboard in front of you. If you are a beginning user of Arabic, then any of the three available options (Arabic 101, Arabic 102, or Arabic 102 AZERTY) will do. More advanced users probably have a favorite, especially if coming from the Arabic-speaking and Arabic-typing world. If you want to know the differences between the Arabic keyboards, see **step 5b** below. If you want to

know which Arabic keyboard layouts of the above three is my favorite, the simple answer is none of them. See **step 6c** for the Arabic keyboard layout I use most. If you have installed this free QWERTY/ phonetically defined keyboard that I discuss in **step 6c** below, look for ASDF Western or ASDF Eastern, and select either of these keyboards. They are the best Arabic keyboard layouts available in my opinion. Choose any of the Arabic keyboard layout options and then left click on the OK button.

4a.iv. You should be back at the Text Services and Input Languages box. Keep the Default Input Language English (United States)–US. Under Preferences left click the Language Bar... button. A Language Bar Settings box should appear. Tick the box that says Show the Language Bar on the Desktop and tick the box that says Show Additional Language Bar Icons in the Taskbar. Finally, left click on the OK button.

4a.v. A box with an EN (short for English) blue block should appear on the Taskbar on the bottom right hand corner or on the top right of your computer screen. Left clicking on the EN will allow you to switch from one input language to another, in this case from English to Arabic. Right clicking on the EN block and then left clicking on Settings will allow you easy access to enabling additional input languages and keyboard layouts on your PC.

4a.vi. This final step is for those who have installed Microsoft Word 2003 under the Windows 2000 or Windows XP operating systems. This step involves signaling to your word processor that complete Arabic functionality has been enabled within your computer's operating system.

First, left click on Start found the bottom left-hand corner of your screen. Second, left click on Programs or All Programs. Third, left click on Microsoft Office. Fourth, left click on Microsoft Office Tools. Fifth, left click on Microsoft Office 2003 Language Settings. Sixth, within the box that appears, left click the Enabled Languages tab at the top. Seventh, in the Available languages box, select the language(s) you want to enable. Arabic should already be enabled. Remove all of the languages you want to disable. If you do not see the language that you want, or if you see (limited support) next to a language in the Available languages box, you may need to install additional system support files in order to operate the language. Left click on Okay.

If any Microsoft Office programs are running, the Language Settings tool will notify you and will automatically close the programs. The features for the language you enabled will appear the next time you start any Office program.

4a.vii. A terrific Microsoft Office 2003 add-in allows you to “identify and change language, keyboard, and regional settings for Microsoft Windows, Microsoft Internet Explorer, and Microsoft Office 2003 programs with a single tool.” I highly recommend installing this tool for frequent users of second languages on the Internet, in e-mail, and in MWord:

<http://www.microsoft.com/downloads/details.aspx?FamilyId=CC37E08C-1019-4AE8-A258-0D5412876DEC&displaylang=en>.

After downloading this tool to your desktop from the above link, double left click on the EXE installation file. A shortcut should appear on your desktop. Double left clicking on the shortcut will bring up this handy tool's window. The different clickable options in the window allow you to change all the Microsoft Office 2003 desktop language settings that are discussed in this article under one hood.

4a.viii. Continue to **step 5**.

Step 4b: How to enable all other Windows operating systems to type Arabic fonts

For all other Windows users (Windows 98, Windows 98 SE, Windows ME, and Windows 2000) follow these **four** instructions.

4b.i. Left click on Start. Left click on Settings. Left click on Control Panel. Double-left click on Keyboard. Left click on the tab labeled Input Locales or labeled Language at the top of the screen that appears. Left click on the Change button. For those users who do not see a box with a Change button in it, left click on the Add... button. A Text Services box will appear, an Add Input Locale box will appear or an Add Language box will appear. The Default Input Language should remain English (United States). If there is a box titled Installed Services, left click the Add... button and search for Arabic. If such a box does not appear, simply search for Arabic. If Arabic is not among the additional language options, then you will need to do one of two things, or both: 1) install Arabic Language Support from <<http://windowsupdate.microsoft.com>> and <<http://office.microsoft.com/productupdates/>>, or 2) install a higher version of Microsoft Office and enable the Microsoft Office Language Settings for Arabic. However, if Arabic is among the many options, then you will see quite a few varieties of Arabic listed. These country specific versions of Arabic do not reflect any dialectical differences that may be enabled on your keyboard. Since no differences exist in the country choice, you may choose whichever country you wish that is labeled as Arabic.

4b.ii. In the same box, under Input Language, there is an area for selecting a keyboard type from a drop-down menu. First be sure the box labeled Keyboard Layout is ticked and then scan the menu for an Arabic keyboard. Some versions of Windows take you directly to Keyboard Layout within the Add Input Locale box. If so, do what is intuitive; Scan the menu for an Arabic keyboard.

4b.iii. There are minor differences in the keyboard layouts available from Microsoft. The keyboard you choose will determine which Arabic letters correspond to the English letters on the keyboard in front of you. If you are a beginning user of Arabic, then any of the three available options (Arabic 101, Arabic 102, or Arabic 102 AZERTY) will do. More advanced users probably have a favorite, especially if coming from the Arabic-speaking and Arabic-typing world. If you want to know the differences between the Arabic keyboard layouts, see **step 5b** below. If you want to know which Arabic keyboard layout of the above three is my favorite, the simple answer is none of them. See **step 6c** for the Arabic keyboard I use. But for now, choose any of the three Arabic keyboard layout options and then left click on the OK button.

4b.iv. Next, tick the box that says Enable Indicator on Taskbar. Finally, left click on the Apply button. A blue EN (short for English) block should appear on the Taskbar on the bottom right hand corner of your computer screen. Left clicking upon EN will allow you to switch from one input language to another, in this case from English to Arabic. Right clicking on the blue EN block and then left clicking on Properties... or Settings... will allow you easy access to enabling additional input languages and keyboard layouts on your PC.

Step 5a: How to enable the Arabic On-Screen Keyboard in Windows

Now that Arabic is enabled on your PC, how do you know which Arabic letters correspond to the English keys that are on your English keyboard? You can either purchase sticky, transparent overlays to place over your existing keyboard keys or you could purchase an Arabic/ English keyboard from a number of on-line companies. For these options, see **step 6a** below.

5a.i. An alternative, free option is to use Microsoft's built-in, free, virtual Arabic On-Screen keyboard. Left click on Start. Left click on Programs. Left click on Accessories. Left click on Accessibility. Left click on On-Screen Keyboard. You probably will want to create a shortcut to the Arabic On-Screen Keyboard and place it on your desktop or Quick Launch Toolbar.

5a.ii. Microsoft **Windows 98 SE, Windows 98, Windows 95c**, Windows 95b and Windows 95a are not equipped with On-Screen Keyboard capabilities. If your Windows version does not belong to this class, then it may be the case that this feature either has been disabled or was never installed from your Windows CDs. Continue reading below to learn how to enable the On-Screen Keyboard in Windows. If your Windows version does belong to this class, go to **step 5c** for a free alternative to the On-Screen Arabic Keyboard.

To enable the On-Screen Arabic Keyboard feature in Windows, begin by left clicking on Start. Left click on Settings. Left click on Control Panel. Double-left click on Add/Remove Programs. Left click on the tab labeled Windows Setup. Scroll down the list of options. Tick the following boxes: Accessibility and Multilanguage Support. Left click on Apply. If you are asked to insert your Windows CDs, do so. Restart the computer. Now go back up to the previous instruction set and try enabling the On-Screen Keyboard again. If this does not work, then contact an IT specialist to help you.

5a.iii. With the **On-Screen Keyboard** now open, open a new Microsoft Word document. Left click on the EN and left click again on AR Arabic. Moving your mouse over the On-Screen Keyboard will change it to an Arabic typeface. Now you know where the Arabic keys are! You can type Arabic directly on a document by left clicking the keys with your mouse! Who said typing in Arabic was difficult? And no matter what language or Arabic keyboard layout you install (yes, there are different keyboard layouts for the same language; see **step 5b**), the On-Screen Keyboard will change automatically to match whatever keyboard layout corresponds to the language in the language bar, including my favorite Arabic typeface that I discuss in **step 6c**.

Step 5b: Choosing a Microsoft Arabic keyboard layout

What are the major differences between the Microsoft ARABIC (101), ARABIC (102), and ARABIC (102) AZERTY keyboards? Which one should I enable in Windows? All three keyboards are available as a single image in Wikipedia for the purposes of comparing them to one another: http://en.wikipedia.org/wiki/Image:Microsoft_Arabic_Keyboards_Madhany.png.

Notice that the major difference between the 101 keyboard and two of the 102 keyboards is the placement of the Arabic letter *dhaal* on the top left of the 101 keyboard, directly above the Tab key. Also notice that the major difference between the 102 keyboard and the 102 AZERTY keyboard are the French characters in the place of the Arabic numerals on the AZERTY keyboard.

Which is my favorite Arabic keyboard layout? None of the above. See **step 6c** for the free Arabic keyboard layout I use and recommend to others.

Step 5c: Installing the Arabic Visual Keyboard for Word 2000 and Word XP (2002)

The Microsoft Visual Keyboard is a utility which allows you to view the keyboard layout for each Input Locale or language within any Microsoft Office application. This is particularly helpful for computers running Microsoft **Windows 98 SE**, **Windows 98**, **Windows 95c**, **Windows 95b** or **Windows 95a**, since they are not equipped with the On-Screen Keyboard. (See **step 5a** above.) Thus, Microsoft has created a Visual Keyboard for these older operating systems if they are also running newer Office programs, such as Word 2000 or Word XP (2002).

I suggest installing this add-in if your Windows version does not support the Arabic On-Screen Keyboard. To download and install this add-in, go to <http://office.microsoft.com/downloads/2002/VkeyInst.aspx>. Note that before you can use the Arabic Visual Keyboard, you must first install the Arabic language (AKA Input Locale) on your system. To do this, see **steps 3 and 4** above.

Once you have the keyboard languages installed and the Visual Keyboard installed, using the Arabic Visual Keyboard is simple. To start the Arabic Visual Keyboard, left click on Start, then left click on Programs, and finally left click on Microsoft Office Tools. The Microsoft Visual Keyboard can be found herein. Left click on it. The keyboard for the current language appears. To switch languages, look for the blue block, two-letter keyboard language indicator on your taskbar. To see a list of the installed keyboard languages, click the indicator once. To switch to Arabic, left click on it from the list. Open Microsoft Word and begin typing in Arabic using the Visual Keyboard as a guide.

Step 6a: Purchasing Arabic keyboard stickers and US English/ Arabic keyboards

For a more permanent solution to Arabic typing, consider purchasing either Arabic keyboard stickers (otherwise known as overlays or keytop labels) or a US English/ Arabic Keyboard with both US English and Arabic letters factory-printed on the keys.

Both the keyboard stickers and the US English/ Arabic keyboards are available from Fingertip Software <http://www.fingertipsoft.com/arabic.html>. Be sure to shop around for the best price at these other reputable web sites: <http://www.customkeys.com/>, <http://www.arabickeyboards.com/>, and <http://www.datacal.com/dce/arabic-keyboards.htm>.

In my experience, when students download and install the Arabic keyboard I recommend in **step 6c** below, they no longer want to purchase Arabic keyboard stickers/keytop labels. This is because the students are able to learn the Arabic keyboard in **step 6c** in less than five minutes! It is that intuitive!

Step 6b.i: Defining your own keyboard layout for Arabic fonts

The Microsoft Keyboard Layout Creator (MSKLC), available here for download: <http://www.microsoft.com/globaldev/tools/msklc.msp>, allows you to define your own keyboard layout for the Arabic language fonts you install. Doing so will also allow you to quickly and easily enter symbols with a simple keystroke. However, the MSKLC is only compatible with computers running Windows 2000 and Windows XP.

For entering Arabic letters in Microsoft products, most Arabic students prefer the free Arabic QWERTY keyboard I discuss in **step 6c** below because it is the most intuitive for a non-native

Arabic speaker to use, which in turn makes it very easy to memorize where all the Arabic keystrokes are located.

Step 6b.ii: Defining your own keyboard layout for Arabic transliteration fonts

Assigning a shortcut key to a symbol or special character allows you to define your own keyboard layout for the Arabic transliteration/ Romanization fonts. Doing so will also allow you to quickly and easily enter symbols with a simple keystroke. This is a necessary step for those scholars who want to quickly and efficiently type in Arabic transliteration without switching between keyboards and fonts. With the **Arabic Typesetting** font installed, one can type in English and Arabic transliteration in the same font and with the same keyboard. All one has to do is take ten minutes to map the Arabic transliteration keys onto their current English keyboard.

First, a note about best practices. It is best to begin shortcut key combinations with CTRL, ALT, or a function key. For Arabic transliteration, I prefer ALT. For example, ALT+d = d with a dot underneath it. ALT+SHIFT+d = D with a dot underneath it.

This is a 9-step process within Microsoft Word 2003. First, go to the top of the page in Microsoft Word. Left click on the Insert menu and then left click Symbol. Second, left click the Symbols tab in the box that appears. Third, in the drop-down Font menu, find and left click on a transliteration font you have previously installed. (See **step 9b** for a list of transliteration fonts and where to find them on the Internet.) For our purposes, left click on the **Arabic Typesetting** font. Fourth, left click the symbol or character you want. Try and find the d with a dot directly below it and left click on it. Fifth, left click Shortcut Key. Sixth, move the cursor to the box labeled “Press new shortcut key.” Seventh, press the key combination you want to use. For example, press ALT+ the desired key. Let’s assign the d with a dot directly below it to ALT+d.

Eighth, after choosing a key combination, look at “Currently assigned to” to see if the shortcut key combination is already assigned to a command or other item. Reassigning a key combination means that you can no longer use the combination for its original purpose. For example, pressing CTRL+i changes selected text to italics in all Microsoft Word products. If you reassign CTRL+i to a new command or other item, you will not be able to italicize text by pressing CTRL+i unless you restore the shortcut key assignments to their original settings. For this reason, I suggest using the ALT key when assigning characters in Arabic transliteration. Ninth, left click the box labeled Assign. Repeat this 9-step process until all the Arabic transliteration fonts have been assigned.

Step 6c: Installing a free Arabic QWERTY/ phonetically defined keyboard

If you can not get accustomed to the Arabic keyboards provided by Microsoft and you do not want to define your own Arabic keyboard from scratch, I highly recommend using the Arabic keyboard available for download at the bottom of this web site:

<<http://zsigri.tripod.com/fontboard/arabic.html>>. This Arabic keyboard created by Zsigri Gyula more closely resembles the sounds and shapes of the US English QWERTY keyboard. It is extremely helpful if you do not type in Arabic on a regular basis, and it is without a doubt more intuitive than the Arabic keyboards Microsoft provides, pictures of which can be found at <<http://www.answers.com/topic/microsoft-arabic-keyboards-madhany-png>>.

Follow the instructions online for directions on how to activate the downloaded keyboard from the above web site, or simply return to **step 4a** above. In short, if you have installed this free QWERTY/ phonetically defined keyboard, look for ASDF Western or ASDF Eastern, and select

either of these keyboards. These are the best Arabic keyboard layouts available in my opinion because they are the most intuitive for a non-native Arabic speaker to use. This in turn makes memorizing where all the Arabic letters are located extremely easy.

If you are running Windows 98 SE or earlier, I suggest using the Microsoft Arabic Visual Keyboard (see **step 5b**) in conjunction with these ASDF Western or ASDF Eastern Arabic QWERTY/phonetic keyboards for typing within Microsoft Word 2000 or Word XP (2002).

Step 7a: How to extend support of Arabic to all programs in Windows

Those users running Windows XP will want to enable Arabic in a host of other programs in addition to their favorite word processing program. To do so, begin by left clicking on Start. Left click on Control Panel. Double-left click on Regional and Language Options. Left click on the Languages tab at the top of the box that appears. Under Text Services and Input Languages, left click on the Details... button. Left click on the Advanced tab at the top of the new box that appears. Tick the box that says Extend Support of Advanced Text Services to All Programs. Left click on the Apply button at the bottom of the box. Restart your computer if asked to do so.

Step 7b: How to enable right-to-left typing of Arabic in most versions of Microsoft Word

You will be typing Arabic backwards unless you enable the right-to-left cursor shift on your Microsoft Word toolbar. First open a new document in Microsoft Word. Hover your mouse over the word File on the top left of the toolbar. Right click. Move your mouse to the very bottom of the menu and left click on Customize... Left click on the Commands tab at the top of the box that appears. In the left Categories pane, scroll down and left click on the word Format. In the right Commands pane, scroll down until you find the Keyboard Language icon. It should look similar to the EN we saw earlier. Left click on the Keyboard Language icon and drag it to the toolbar and deposit it directly under the word File. Do the same with the Right-to-Left and Left-to-Right icons found directly beneath the Keyboard Language icon. These toolbar icons will serve as your shortcuts for switching between languages and typing directions as you compose your multilingual documents in Microsoft Word.

Step 8a: How to automatically detect the Arabic language in Microsoft Word

The stress-free method of using Arabic in Microsoft Word is to set it to automatically detect the language of the text that it is being typed. To do this, first open Microsoft Word. Left click on the Tools menu at the top of the screen, select Language, and then left click on Set Language. Left click on the box that says Detect Language Automatically. Finally left click on the OK button. Microsoft Word can now detect the Arabic that was installed by the Arabic Proofing Tools installation. Word also can check the spelling and grammar of text written in Arabic.

Step 8b: How to enable Arabic Proofing Tools in Microsoft Word⁸

Did you know that an **Arabic spelling checker**, an **Arabic grammar checker**, **Arabic thesauri**, and **Arabic bidirectional dictionaries** are also available in Microsoft Word? They are found in the Arabic Proofing Tools and work best when using Microsoft Word 11 (AKA 2003) or Microsoft Word 10 (AKA 2002 or XP).⁹

To test whether or not you have the Arabic Proofing Tools installed on your computer, type some gibberish in Arabic, depress the F7 key, and see what happens. If the language is not recognized, then installing the Office XP Proofing Tools is necessary. Insert the Office XP Proofing Tools CD-ROM. Left click Start and then left click Run. Browse to find the following on the inserted CD-ROM: Ptksetup.exe. In the Proofing Tools Setup, select Custom for the type of Setup that you want to perform. Select the Arabic language Proofing Tools and then left click Run All from My Computer. After the installation finishes, reboot the computer.

Arabic Proofing Tools for Microsoft Office 2003 (AKA Microsoft Office 11) is not backward compatible with earlier versions of Microsoft Office. The Microsoft Office 2003 Proofing Tools CD must be purchased separately from the Microsoft Office 2003 CDs and can be found here for direct purchase: <<http://www.microsoft.com/products/info/product.aspx?view=22&pcid=071b9ced-ed82-47ef-b5fa-a42ecbdec9b7&type=ovr>>. The below web site details what's new for Arabic in Office 2003 in addition to extra on-line Arabic features: <<http://www.microsoft.com/middleeast/arabicdev/office/>>.

Step 8c: How to type Hindi and Arabic numbers in Microsoft Word

For Windows XP and Windows 2000 users, typing Hindi numerals is now easier than ever. Within the same new Microsoft Word document, left click on the word Tools on the top toolbar. Move to the bottom of the menu, and left click on Options.... Left click on the tab labeled Complex Scripts at the top of the new box. Under General and to the right of Numeral, scroll down the menu and select Context. Left click on the OK button. The Context feature will allow Windows XP and Windows 2000 users to use Arabic numbers (1, 2, 3, etc.) when typing in the EN input language (English) and Hindi numbers when typing in the AR (Arabic) input language.

Step 8d: How to smooth Arabic screen fonts

Using font smoothing makes Arabic and other related right-to-left languages easier to read on the computer screen. These instructions reflect a classical layout of the Windows operating system and do not conform to the Windows XP enhanced layout. In all versions of Windows, left click on Start, left click on Settings, and left click on Control Panel. Find the Display icon and double-left click on it. Next, left click on the Effects tab on the top of the box that appears. Under Visual effects, left click on the "Smooth edges of screen fonts" box, so that a check mark appears within the box.

Step 8e: How to move the footnote separator from the left side to the right side of the page

When working with Arabic or other right-to-left script languages in Microsoft Word, a common problem is aligning the footnote separator to the right side of the page to be consistent with the right-to-left Arabic text present in an Arabic document. The short line that appears directly below the main text on a page separating the footnotes from the rest of the text shows up by default on the left-hand side of the page and not on the right-hand side of the page, as it should when working with Arabic.

This issue can be resolved in a few steps. First, you have to access the document that contains the Arabic footnotes through Normal View. To do this, move your mouse to the tool bar at the top left of the screen, and left click on View and then left click on Normal in the drop down menu. Next, return your mouse to the same tool bar at the top of the screen and left click on View again but

now left click on Footnotes in the drop down menu. You should now be able to see the footnotes in a split window at the bottom of the screen. A drop down menu should appear with the words “All Footnotes” selected. Left click on the arrow of the drop down menu and select Footnote Separator. The default short footnote separating line will be shown in the split window. Now you can make all the changes to this footnote separator that you want. For example, to shift the footnote separator to the right side of the page, click on the line in a manner that highlights it, and then left click on the shortcut symbol on the top of the screen that corresponds to Align Left.

Step 9a: Free Arabic fonts

The favored Arabic font in Microsoft Word 2002? **Simplified Arabic** of course. All the diacritics appear separated from (i.e. not touching) the letters to which they belong, a rare find in the Arabic typing business. **Arabic Typesetting** is my favorite font for Microsoft Word 2003 because it not only can do Arabic beautifully (it even stacks letters!), but can also form the less commonly taught Arabic-script languages as well. It even does perfect Arabic transliteration! For more about how to acquire and use this font, see **step 9b** below.¹⁰

9a.i. Microsoft has made available an Arabic font package on their web site: <http://www.microsoft.com/downloads/details.aspx?FamilyID=A83C0E03-8913-47A3-ACB7-8AC357627620&displaylang=AR>. This site lists in English the different fonts contained in this single download. Be sure to click on the blue underlined link for your operating system if it is not Windows XP. This Arabic font package will work with Microsoft Office 2000, 2002, and 2003, and it will work on all versions of the Windows operating systems.

9a.ii. Arabic fonts for purchase can be found on many font vendors' web sites. The Summer Institute of Linguistics, now commonly known as SIL International, hosts not only Arabic fonts for purchase <http://www.sil.org/computing/fonts/> but also resources for acquiring free Arabic fonts <http://www.sil.org/computing/fonts/Lang/archives.html>.

9a.iii. Although not as pretty to the eye as purchased Arabic fonts, free Arabic fonts are available for download from numerous web sites. The best are included here. Professor Luc Devroye <http://jeff.cs.mcgill.ca/~luc/arab.html> hosts links and resources to many Arabic language fonts. Alan Wood provides Unicode Arabic fonts for Windows and Macintosh platforms <http://www.alanwood.net/unicode/fonts.html> in addition to a test for Unicode support in Web browsers <http://www.alanwood.net/unicode/arabic.html>. Finally, David McCreedy has almost a dozen pages of Arabic-script Unicode fonts as well as samples of their images: http://www.travelphrases.info/gallery/Fonts_Arabic.html. Those interested in other Arabic-script Unicode fonts should visit the South Asian Language Resource Center's font collection at the University of Chicago: <http://salrc.uchicago.edu/resources/fonts/main.html>.

9a.iv. I removed my link in this section to Professor Berlin's font archive, which was closed in early 2005 because of his retirement. The doctor does have a personal website at <http://www.drberlin.com>, wherein he may continue his font activities in the future.

9a.v. The Type Directors Club, an international typography organization, recently selected two winning entries in Arabic currently on display on their web site here:

<<http://www.tdc.org/news/2003Results/Arabictype.html>> and here:
 <<http://www.tdc.org/news/2003Results/Sakkal.html>>. The entries reflect the work of Mamoun Sakkal, an international expert in Arabo-Islamic Art, Arabic Calligraphy, and Graphic Design. His beautiful, award-winning web site and the fonts can be found here:
 <<http://www.sakkal.com/type/index.html>>. One of Sakkal's entries that won a prize is **Arabic Typesetting**, my favorite, single, default font for English, Arabic, and Arabic transliteration. I discuss how to acquire and use Arabic Typesetting in **step 9b.i**.

9a.vi. For “news and links related to Arabic fonts, the people who make them and the people who use them,” visit <<http://www.microsoft.com/typography/links/FontPortal.aspx?PID=8>>.

Step 9b: Free Arabic transliteration fonts and one worth paying for¹¹

Of the many Arabic transliteration fonts available for use in Windows, the **five (i-v)** discussed below are the best, in my opinion. The first is provided by Microsoft for a fee; purchase of the Office 2003 Proofing Tools CD is necessary. The latter ones are available for free from various Internet sites. My recommendation is to download all of the freely available fonts and install them all on your computer first. If you are in need of a robust, stable, cross-platform, cross-computing system that will allow you to use a single font for all your documents in English, Arabic, and Arabic transliteration, then purchase the Microsoft Arabic Typesetting font that I discuss in **9b.i** below. Many professors and students will not need to purchase the Arabic Typesetting font because their universities or home departments may maintain a site license for Office 2003 Proofing Tools. Check with your university computing services office.

If your purpose is to create your own diacritic keyboards, be sure to read sections **9b.vii** and **9b.viii** below. In them I discuss work-around solutions within Microsoft Word for both the PC and Mac. Note that the most basic system for defining a keyboard layout for transliteration fonts I have detailed above in **step 6b.ii**.

Finally, for easy-to-follow instructions on how to install any font you have downloaded from the Internet, copy and paste this link in your Internet browser window:
 <<http://www.microsoft.com/typography/ttfinst/ttfinst.htm>>.

9b.i. Those with serious Arabic (and other Islamicate-language) transliteration needs may be interested in purchasing (or upgrading to) Microsoft Word 2003 and installing the additional Arabic Proofing Tools¹² since this combination includes for the first time a font called Microsoft **Arabic Typesetting**, an impressive solution to the Arabic Romanization quagmire.¹³ One of the greatest difficulties faced by Arabicists and Middle Eastern Studies specialists has been finding a transliteration font that is fully searchable. That is to say that one can use the CTRL+F feature in Microsoft Word to find letters with their embedded diacritics (e.g. searching for a D, G, H, T, or Z with a dot directly underneath or above the letter). Well, with Arabic Typesetting, you finally can! This feature alone makes the font a must have for specialists in the field. Other benefits of using this font are that it is a Unicode-enabled font and that it supports all of the Islamicate/ Arabic script languages.¹⁴ Samples of this award winning, beautiful font are available online as an HTML file: <<http://www.sakkal.com/type/typesetting.html>> and as a PDF file: <<http://www.middleeastmedievalists.org/ArabType.pdf>>.

Another thorn in the side of scholars is having to constantly switch between multiple fonts in a single document because their scholarly writings require—aside from English—frequent use of

transliteration (whether of Arabic or some other Islamicate language) in addition to non-Roman, right-to-left Islamicate-script languages. Well, Microsoft Office 2003 with the additional installment of Proofing Tools finally has a **single, default font that handles all English, Arabic, and Arabic transliteration**. For this reason alone, Arabic Typesetting is worth purchasing, if you plan on pursuing a career in the academy. Microsoft Arabic Typesetting is currently not available for earlier versions of Microsoft Word due to licensing restrictions. However, I have seen it work beautifully in Word XP (AKA Word 2002) while running a Windows 98 SE operating system, (just don't ask me how.) Thus the only way to acquire the font is to purchase the Office 2003 Proofing Tools CD.¹⁵

A minor inconvenience of the **Arabic Typesetting font** is that the size of the screen font does not match the size of the commonly used Times New Roman screen font. 12-point Times New Roman is equivalent to 16- or 17-point Microsoft Arabic Typesetting, on the computer screen and in print. In addition, the space between the typed lines is 75% larger than normal. Thus a single-spaced Arabic Typesetting document looks more like a one and one-half (1.5) spaced Times New Roman document. Nevertheless, there is a work around to this minor issue. First select Arabic Typesetting as your font. Second, left click on Format in the tool bar at the top of the screen in Microsoft Word. Third, left click on Paragraph. Finally, Under the blue subheading, Spacing, change Line Spacing: to Multiple and change At: to 0.75.

Setting Arabic Typesetting as your default font within Word will now allow you to type English, Arabic, and Arabic transliteration fonts with ease in the same document and on the same line, without the need to switch between different fonts. To set the Arabic Typesetting font as the default font in Microsoft Word 2003, follow the directions on this page:

<<http://office.microsoft.com/en-us/assistance/HP051894671033.aspx>>; for Microsoft Word 2002, follow the directions on this page: <<http://support.microsoft.com/?kbid=291291>>. In addition to these directions, be sure to set not only the Latin Text font to Arabic Typesetting, but also the Complex scripts Font to Arabic Typesetting. Also do not forget to change the default font size on both to 16.

Although not a universal solution, Microsoft Word 2003, with the additional installation of the Office 2003 Proofing Tools, and with the **Arabic Typesetting** font enabled is by far the most complete Arabic word processing system for PCs to date. The main argument for it not being a universal solution is because Arabic Typesetting and Proofing Tools are not supported in Microsoft 2004 for Mac OS X. Nevertheless, I hold the opinion that using universal word processing technologies and Unicode-transcription fonts that will work across a number of platforms and will survive Microsoft's endless system and program updates is best. Using a Microsoft-sponsored and supported font is the only guarantee that the fonts will continue to work in all future Microsoft products, whether under the Mac or Windows. Thus, I believe **Arabic Typesetting font to be the best option for scholars** using a PC who 1) want a single font for their English, Arabic, and Arabic transliteration needs; 2) want a font that is fully integrated within all Microsoft products, including IE 6.0 and Office 2003's dictionaries, thesauri, spelling and grammar checkers, 3) want a font whose character sets (whether English, Arabic, and Arabic transliteration) are fully searchable in all Microsoft and Adobe products; 4) want a font that requires no additional programs or downloads external to Microsoft and 5) want a font that is aesthetically pleasing to the eye.¹⁶

In order to access the Arabic Microsoft Typesetting font as well the Arabic thesauri, spelling, grammar, and style checkers, one must have installed separately the Microsoft Office Proofing Tools 2003 available here:

<<http://www.microsoft.com/products/info/product.aspx?view=22&pcid=071b9ced-ed82-47ef-b5fa-a42ecbdec9b7&type=ovr>>. Check to see if the Microsoft Office 2003 Suite you purchased contains

this CD-ROM or the Proofing files. It is within the above Proofing Tools CD-ROM that the Arabic language font files exist. For instructions on how to install the Arabic Proofing Tools, consult the instructions that came with the CD-ROM or read my instructions in **step 8** above. Note that Microsoft Word 2003 and the 2003 Proofing Tools are currently not supported on any earlier versions of the Windows operating system other than Windows 2000 SP3 or SP4 (Service Pack 3 or 4) and Windows XP.

Also note that many professors and students will not need to purchase the Arabic Typesetting font and the 2003 Proofing Tools CD because their universities or home departments may maintain a site license for both Microsoft Office 2003 and Microsoft Office 2003 Proofing Tools. Check with your university computing services office.

9b.ii. By far, one of the better free, comprehensive, Unicode 4.0-compliant, transliteration systems available is hosted at: <<http://titus.uni-frankfurt.de/software/softwa.htm#Etabelle>>. The **TITUS Cyberbit Basic** translation font is a product of an academic digitization and standardization project. It contains all the characters necessary for transliterating the most common Arabic-script languages including Arabic, Turkish, Persian, and Urdu. The size and shape of the font resembles Times New Roman, although the space between the typed lines is larger. Therefore a single-spaced page of text composed in TITUS Cyberbit Basic looks like the spacing is actually one and one-half (1.5) space. Installation instructions are available on the above link. See the beauty of the Arabic-script font in action here if you still doubt: <<http://titus.uni-frankfurt.de/unicode/alphabet/arabtest.htm>>. For more Unicode scripts that this font supports, see <<http://titus.uni-frankfurt.de/unicode/unitest.htm#Etabelle>>.

Installing the **TITUS Cyberbit Basic** (True Type) font is a simple 9-step process. First, point your browser to: <<http://titus.fkidg1.uni-frankfurt.de/unicode/tituut.asp>>. Second, fill in the form. (If you're worried about privacy, aliases are permitted.) Third, select the option 'Self-extracting EXE file' and then left click the 'Submit'-button. Fourth, right click on the word "here" in the sentence "Please download the font now by clicking here." You can save the file to your desktop by right clicking on the word "here" and choosing Save Target As (in EI) or Save Link As... (in Mozilla). Fifth, point to your desktop. After the download is completed, double left click the file on your desktop to decompress it. Seventh, open your 'Fonts' folder (in the Control Panel). Eighth, drag the TITUSCBZ.TTF font file from your desktop into the Font folder by left-clicking on the TTF file and moving it into the Font folder. Ninth, drop the TTF file into the Font folder. TITUS Cyberbit Basic (True Type) has been successfully installed!

9b.iii. McGill University's Institute of Islamic Studies has made available the **Times New Arabic** font free for download. Their web site also provides a useful transliteration table for quick reference, instructions for using the Times New Arabic font, and instructions for downloading and installing the font. The benefit of using this font is that it resembles Times New Roman in look, shape, and size. Unfortunately, it is a non-Unicode font. You can download the font from here: <<http://www.mcgill.ca/islamicstudies/students/arabic/>>.

9b.iv. The University of Zürich has eight font files and one instruction guide available for download as a single ZIP file on their web site. If you do not read German, you can have <<http://www.google.com/>> translate the page for you by copying and pasting this link <<http://www.ori.unizh.ch/ueberweg/orientalfont.html>> in their search engine box. Alternatively, just click on this link for the translated English page:

<http://216.239.39.104/translate_c?hl=en&u=http://www.ori.unizh.ch/services/transcription/transcriptionfont.html&prev=/search%3Fq%3Dori.unizh.ch,%2B%2Boriental%2Bfont%26hl%3Den%26lr%3D%26rls%3DRNWE,RNWE:2005-32,RNWE:en>. This **Helvan** and **Timur** font package looks and works very similar to the not so readily-available **Times Arabic** font (not to be confused with the **Times New Arabic** font). The University of Zürich Helvan and Timur fonts work under both Windows and Macintosh platforms, and a sample of how Timur looks is available here: <<http://www.ori.unizh.ch/services/transcription/transcriptionfont/wa-laylin.jpg>>.

9b.v. The **Gentium** font “belongs to the nations” and is a Unicode-encoded font that works in almost all of the applications built for Mac OS X and Windows XP. It was created by academics to support the multi-platform publishing needs of countries that add diacritics to their Latin base-character set. SIL International (formerly known as the Summer Institute of Linguistics) hosts the Gentium font and is responsible for its continual development. The benefit of this transliteration font is that documents typed with it under Mac OS X can be read under the same program in Windows XP. Information about the Gentium font and the free download is available here: <<http://scripts.sil.org/gentium>>.

9b.vi. As stated previously, many transliteration fonts for Arabic exist on the Internet. While I am of the opinion that they are not as good as the five I have listed above, I do want to share with you what some of them are and where they can be found.

9b.vi.A. The first bunch can be downloaded for free from a friend’s web site here: <<http://www.ghazali.org/fonts/>>. All the transliteration fonts on this page that you should consider downloading and installing are, in order of appearance: AraTransRoman, Georgia Ref (GRGAREF), Timesdiacritic (Timer___), Times Beirut (Times Beirut Roman), Transliteration 1 (Tran___) Trn (Trnnorma), Verdana Ref, and Translit Norm (trans3_1.ttf).

9b.vi.B. The second transliteration font is called OI-Beirut and is available under Resources from: <<http://www.samuli-schielke.de/research.htm#4>>. Note that some of these links and fonts are in the process of being fixed.

9b.vi.C. Another “Beirut” transliteration font package is available from the Orientalisches Seminar at Albert-Ludwigs-Universität Freiburg. It is available as a downloadable EXE file on the left-hand side of this page <<http://www.orient.uni-freiburg.de/fmoll/>> under the heading “Transkriptions Fonts Beirut.” Double left click the executable file after downloading it to your desktop, save the fonts to your desktop, and then install them into your Windows System Fonts folder.

9b.vi.D. The Universität zu Köln also has an Arabic transliteration font called ArabTransLit available for download as a ZIP file here: <<http://www.uni-koeln.de/themen/fremdsprachig/arabtranslit.html>>.

9b.vi.E. The Islamwissenschaft und Iranistik at the Ruprecht-Karls-Universität Heidelberg maintains a True Type Arabic/Persian/Turkish transliteration font system called CKey available for download as 4 separate files at the bottom of this page: <<http://islamwissenschaft.uni-hd.de/downloads.html>>. Although this system works very well and is relatively easy to set up for advanced Windows XP users, I am of the opinion that programs such as these will soon be historical fossils.

I believe that using universal word processing technologies and Unicode-transcription fonts that will work across a number of platforms and will survive Microsoft’s endless system and program updates is better than using home-made transcription/ transliteration programs. Using a Microsoft-

sponsored and supported font is the only guarantee that the fonts will continue to work in all future Microsoft products. Thus, I believe **Arabic Typesetting** font to be the best option for scholars using Windows 2000 or Windows XP who 1) want a single font for their English, Arabic, and Arabic transliteration needs; 2) want a font that is fully integrated within all Microsoft products, including IE 6.0 and Office 2003's dictionaries, thesauri, spelling and grammar checkers, 3) want a font whose character sets (whether English, Arabic, and Arabic transliteration) are fully searchable in all Microsoft and Adobe products; 4) want a font that requires no additional programs or downloads external to Microsoft and 5) want a font that is aesthetically pleasing to the eye.

9b.vii. For the ability to add diacritics to any letter and to create transliteration fonts either for the Mac or PC, based on Times New Roman or any other Unicode font, consider downloading Uniqoder.dot, a Microsoft Word add-in created by Östen Dahl in 2001 and recently modified by Hans-Jörg Bibiko in early 2005:

<<http://email.eva.mpg.de/~bibiko/downloads/uniqoder/uniqoder.html>>.

UniqTitus is another keyboard layout for Microsoft Word based on the Uniqoder program developed by Östen Dahl. UniqTitus is based on the **TITUS Cyberbit Basic** font and was created by Andrej Perdih. It can be downloaded here: <<http://titus.fkidg1.uni-frankfurt.de/unicode/tituutk.asp>>.

9b.viii. For universal transliteration keyboards for both the Mac and Window operating systems, the **Alt-Latin keyboard**, built by Kino, works extremely well when entering all diacritics and odd characters in both operating systems. The downloadable ZIP file for Windows is available at <<http://quinon.com/files/keylayouts/windows/AltLatNT.zip>>, and the downloadable ZIP file for the Mac OS is available at <<http://quinon.com/files/keylayouts/AltLatin.zip>>. The parent directory can be accessed from: <<http://quinon.com/files/keylayouts/>> or at <<http://www.lib.uchicago.edu/e/su/mideast/encyclopedia/unicode.html>>.

Olaf Nelson, a doctoral student at the University of Chicago and an editor of *The Chicago Online Encyclopedia of Mamluk Studies*, has written up installation instructions and created diagrams to show where the transliteration symbols are mapped on the Alt-Latin keyboard. The benefits of this keyboard are that it works in any Unicode-aware program and that it is available for both Windows and Mac operating system platforms. See:

<<http://www.lib.uchicago.edu/e/su/mideast/encyclopedia/alt-latin.html>> for printable HTML and PDF maps of the Alt-Latin keyboard. The corollary site with the installation instructions can be accessed from: <<http://www.lib.uchicago.edu/e/su/mideast/encyclopedia/unicode.html>>.

Step 9c: Freely creating PDF files to efficiently share files with non-Roman fonts

Yet another thorn in the side of those who compute in non-Roman script languages has been 1) attempting to access documents with non-Roman fonts away from your home computer, 2) attempting to print said documents from a printer not attached to your home computer, 3) and attempting to share said documents with other users via e-mail.

Now that you can create files using Arabic language fonts and Arabic transliteration fonts, how is it possible to share the files you have created without installing the exact same operating system, the exact same word processor program version, and the exact same font package on another user's

computer? The answer is by converting your WordPerfect or Microsoft Word document to a PDF (Portable Document Format) file in order to preserve your precious fonts.

Employing a PDF file extension (i.e. a PDF as opposed to a DOC or WDP file extension) allows you to share an Arabic document with others without worrying about the other users' operating systems and font packages, or lack thereof.¹⁷ Downloading and installing Adobe Acrobat Reader if you do not already have it is the first step in this process. The Reader is freely available from here: <<http://www.adobe.com/products/acrobat/readstep2.html>>. This program will allow you to read PDF files.

The ability to **read PDF** files is provided for free by Adobe Acrobat; however the ability to **create PDF** files is not free. Well, almost not.¹⁸ In the most recent version of WordPerfect, the ability to create PDF files has been fully integrated such that purchasing another program is unnecessary. Should you not own this latest word processing program, an alternative, free PDF creation program, pdf995, is available from here: <<http://www.pdf995.com/download.html>>. Download the following two files to your desktop from the top "Pdf995 2-Step Download" box: 1) Pdf995 Printer Driver and 2) Free Converter. Next, install the following file to your desktop: pdfEdit995. This file is located in the box directly under the "Pdf995 2-Step Download" box. After downloading all three files, install them on your computer by double-left clicking on each of them, but be sure to install the converter first, the printer driver second, and the editor third.

This PDF conversion program is free because it advertises a sponsor page in your Web browser each time you run the software. By purchasing the software key for a nominal price, you can create PDF files advert-free. When viewing or sharing your PDF files with someone else, no adverts will be displayed. Note that this is a fully functional program that is integrated in your operating system. It is not a trial version, and it does not expire. This program is also spyware free.

How do you use pdf995 to create a PDF file from Microsoft Word, WordPerfect, or any another program? First, create a file, and then select Print from the File menu. In the Print dialog box, use the drop down arrow to choose your Printer Name from the drop down menu. Select the PDF995 printer. Left click on OK. Finally, type a name for the PDF file you wish to create. The file can now be shared by e-mail and can be opened using Adobe Acrobat or other PDF readers. And the best news is that your precious Arabic language fonts and Arabic transliteration fonts remain undisturbed and undistorted!¹⁹

Step 10: How to enable Arabic Web browsing

And what about the Internet? Netscape Navigator (NN) versions 7.x, Mozilla versions 1.3 and above, and Internet Explorer (IE) versions 5.5 and above all support viewing and composing Arabic on the Internet.

10a.i. Directions on how to arabicize **Internet Explorer (IE)** follows in **two steps**. **1** First check what version of IE you have. You can do this by opening IE and left clicking on the word Help on the top of the page within the toolbar. Left click on About Internet Explorer. If the version number is above 5.5, then continue. If not, consider updating your web browser. Left click on Tools on the toolbar. Left click again on Internet Options.... Left click on the General tab on the top of the box that appears. At the bottom of the box, left click on the Languages... button. Left click on the Add... button within the Language Preference box that appears. Find all the varieties of Arabic listed, select them all by depressing the Ctrl key on your keyboard while left clicking on them simultaneously, and then click on the OK button. They should now appear within the Languages

pane. Left click on the OK button within the Language Preference box. Finally, left click on the OK button within the Internet Options box and restart the computer.

10a.ii. If you ever come across an Arabic web page whose text you can not read, then it's probably the Encoding that is off. Open IE and left click on the View button on the very top toolbar. Drag your mouse over Encoding and left click again. Select Arabic (Windows) by left clicking. Wait for the web page to reset itself. If this still does not do the trick or if you do not see the Arabic (Windows) option, then left click on More. A large menu of options will appear, and the top three options will be different Arabic encodings. Select each one-by-one by left clicking on them until the text appears legible. Now try it by surfing to <<http://www.aljazeera.net/>>.

10b.i. Netscape Navigator and Mozilla look and operate very similarly. Directions on how to arabicize Netscape Navigator 7.x follows in **two steps**. **1** First check what version of Netscape you have. You can do this by opening Netscape and left clicking on the word Help on the top of the page within the toolbar. Left click on About Netscape. If the version number is above 7.0, then continue. If not, consider updating your web browser. Left click on Edit on the toolbar. Left click again on Preferences.... Double-left click on the word Navigator in the Category pane. Left click on the word Languages. Left click on the Add... button within the Languages for Web Pages box that appears. Find all the varieties of Arabic listed, select them all by depressing the Ctrl key on your keyboard while left clicking on them simultaneously, and then click on the OK button. They should now appear within the Languages for Web Pages pane. Left click on the OK button within the Languages for Web Pages pane. Finally, restart the computer.

10b.ii. If you ever come across an Arabic web page whose text you can not read, then it's probably the Encoding that is off. Open NN and left click on the View button on the very top toolbar. Drag your mouse over Charter Coding and left click again. Drag your mouse over More and left-click again. Drag your mouse over Middle Eastern and left click again. Select Arabic (Windows) by left clicking. Wait for the web page to reset itself. If this still does not do the trick or if you do not see the Arabic (Windows) option, then try one of the other available Arabic options. Select each one-by-one by left clicking on them until the text appears legible. Now try it by surfing to <<http://www.aljazeera.net/>>.

Step 11: Frequently Asked Questions (FAQ)

Question 11a. I have followed and implemented all of the above instructions but for some reason I still am not able to type Arabic on the Web. What is the problem?

This is a common question I receive. This problem is (more often than not) fixed by uninstalling the Google Deskbar <<http://deskbar.google.com/?promo=gdl-db-en>> and/or the Google Toolbar <<http://toolbar.google.com/>> that is on the computer. Either or both the Google Deskbar and the Google Toolbar interfere with Arabic script languages when typing on the Internet. Uninstall them, then restart the machine, and finally try typing Arabic on the Internet again. Contact me if this does not solve your problem.

Question 11b. Where can I get the **newest Arabic tools and add-ins** for Microsoft Office?

First, be sure you have downloaded the latest Microsoft Office program updates. Go to <<http://office.microsoft.com/>>. Next, check the following Microsoft sites for useful Arabic

downloads, tools, and add-ins:

<<http://www.microsoft.com/middleeast/arabicdev/Misc/Downloads.asp>> and
<http://www.microsoft.com/middleeast/arabicdev/office/office2003_pp.asp>.

Question 11c. What about **Persian (Farsi)** language support? Where can I go to learn more about what Microsoft offers for Persian (Farsi) keyboards, fonts, etc.?

Microsoft Office 2003 has available a Persian Interface Pack available here:

<<http://www.microsoft.com/downloads/details.aspx?familyid=ccf199bc-c987-48f5-9707-dc6c7d0e35d0&displaylang=fa>>. Also be sure to read:

<http://www.microsoft.com/middleeast/arabicdev/Farsi/farsi_support.asp> and

<<http://www.microsoft.com/middleeast/arabicdev/farsi/wPaper.asp>>. An excellent tutorial for typing Word documents in Persian within any Windows operating system can be found here:

<<http://www.laits.utexas.edu/persian/persianword/persianwp.htm>>. The previous site also has resources for Persian fonts, transliteration, and keyboards.

Question 11d. What about **Urdu** language support? Where can I go to learn more about what Microsoft offers for Urdu keyboards, fonts, etc.?

Microsoft Office 2003 has available an Urdu language support web site available here:

<http://www.microsoft.com/middleeast/arabicdev/Urdu/urdu_support.asp>. I highly recommend that anyone who uses South Asian language fonts consult the University of Chicago's South Asian Language Resource Center's (SALRC) best practices web site:

<<http://salrc.uchicago.edu/resources/fonts/main.html>>.

Question 11e. I just bought a CD-ROM when visiting an Arab country and another one from an online retailer here in America. Both CD-ROMs claims to have a collection of Arabic books on them, but I can't get the fonts to work on my computer, even after arabicizing my machine as per your instructions. Are the **CD-ROMs faulty/ bootlegged** or are your instructions incomplete?

The simple answer is that the Arabic library programs you are trying to install use non-Unicode Arabic fonts. For Windows XP Home and Windows XP Pro users who want to access Arabic programs on CD-ROMs purchased from vendors of Arabic dictionaries and Arabo-Islamic literature, follow the instructions in step **3b.ii** above. The same is true for Persian library programs.

What next?

My companion piece to this article titled "Teaching Arabic with Technology: Word Processing, E-Mail, and the Internet" in *A Handbook for Arabic Language Teaching Professionals in the 21st Century* (Mahwah, NJ: Lawrence Erlbaum Associates, 2006) details why and how to utilize basic computer technologies in Arabic teaching pedagogy. Now that complete writing, reading, and word processing capabilities in Arabic are available on the home PC, and now that Arabic is easily accessible on the Internet, a world of language training activities has opened to the field of teaching Arabic as a foreign language. We can finally expect our students to submit typed drafts of long compositions in Arabic, just as we would expect them to do in any language course. Our students can join Arabic chat rooms and virtually interact with Arabic-writers from all over the world.

Finding electronic, Arabic-writing, pen pals is no longer a challenge due to the technological efforts of <<http://www.maktoob.com/>>; Sending and receiving Arabic e-mails have never been easier. Even Arabic on-line proficiency tests are being developed and tested by a number of Arabic language institutions in conjunction with the Department of Education. The possibilities, as you can see here: <<http://www.arabick12.org/>>, are tremendous. And it all starts with arabicizing your Windows PC.

About the author

al-Husein N. Madhany is a doctoral student in the Department of Near Eastern Languages & Civilizations at the University of Chicago, where he studies classical Islamic history and thought. Since 2001, he has worked as an Arabic technology consultant for hundreds of individuals as well as dozens of government committees, private organizations and university departments. He has a companion piece to this article titled "Teaching Arabic with Technology: Word Processing, E-Mail, and the Internet" in *A Handbook for Arabic Language Teaching Professionals in the 21st Century* (Mahwah, NJ: Lawrence Erlbaum Associates, 2006). In addition to this latest article that details why and how to utilize basic computer technologies in Arabic teaching pedagogy, he also has penned articles for *Medieval Islamic Civilization: An Encyclopedia* (ed. Josef W. Meri, 2006) and the *Encyclopedia of Islam in America* (ed. Jocelyne Cesari, 2006). He can be reached at anm@uchicago.edu with comments and questions related to enabling Arabic in Windows applications, a skill set he refers to as "arabicizing Windows."

Notes

¹ I would like to thank the Arabic Language, Literature & Linguistics department faculty and staff at Georgetown University for all their computer related questions, without which this paper may never have materialized. I would especially like to thank Professor Karin C. Ryding for her trust and confidence in my abilities and for her foresight into the need for home user Arabic Internet and word processing literacy. Lastly, great thanks go to my best-friend and loving wife, Liana Sebastian, for her patience and support during those nights I served as the resident information technology guru first and her husband second.

² This paper has been adapted from a manuscript the author is currently writing on resources for Arabic language study in America. This paper can be printed and distributed for free provided credit is given to its author. If copying from or linking to this paper, please credit its author.

³ Those generally interested in the field of multilingual computing will benefit from this article, which is my most recent (February, 2006) version. The most recent versions of this article are hosted in HTML and in PDF formats at <http://www.uga.edu/islam/arabic_windows.html> and <<http://www.nclrc.org/readings/inst-arabic3.pdf>>, respectively. The University of Chicago has also been gracious enough to host the most recent version of my article at <<http://www.lib.uchicago.edu/e/su/mideast/>>. Be sure to check the above three sites for the newest version of this article if you are reading this one well beyond 2005.

I have created a PowerPoint Presentation based on the steps in this article. The 45-minute slide show is a tutorial on Arabicizing your PC. It includes dozens of computer-screen shots in addition to my voice-over illustrating major steps of this article in detail based on the Windows 2000 operating system, Microsoft Office 2003 (11.0), and Internet Explorer 6.0. This popular 26 megabyte PPT file is now available for download from the University of Chicago library web site: <<http://www.lib.uchicago.edu/e/su/mideast/>>. You can save the file to your desktop by right clicking on the next link below and choosing Save Target As (in EI) or Save Link As... (in Mozilla), or you can open the file directly by left clicking on this next link below: <http://www.lib.uchicago.edu/e/su/mideast/multilingual_computing_arabic.ppt>.

⁴ For understanding how and why using basic computer technologies can enhance language learning, see my article, "Teaching Arabic with Technology: Word Processing, E-Mail, and the Internet" in *A Handbook for Arabic Language Teaching Professionals in the 21st Century* (Mahwah, NJ: Lawrence Erlbaum Associates, 2006).

⁵ This paper focuses exclusively on Arabic support for Windows applications. Those interested in Arabic language support for the **Macintosh** OS should consult <<http://www.hf.uib.no/i/smi/ksv/>> or <<http://homepage.mac.com/thgewecke/mlingos9.html>>. Those interested in Arabic language support for **Linux** and **UNIX** environments should consult <<http://www.langbox.com/arabic/>>. Below, I discuss the state of the field and provide the most relevant, time-tested resources vis-à-vis word processing in Arabic on the Mac OS that I have found.

Many of my colleagues and students have been having difficulty arabicizing **Mac OS X**. This is due to a number of reasons, the most important of which is that the most popular word processing

programs built for Mac OS X do not support Unicode, including the previously released version of Microsoft Office, Office X. I would encourage those with Mac OS X to consider downloading and purchasing either of these two relatively cheap programs: **Mellel 2.0** <<http://www.mellel.com/mellel20.html>> or **Nisus Writer Express 2.5** <<http://www.nisus.com/Express/features.php>>. Of interest to Mac OS X users will be the screen shots contained in this article demonstrating how Mellel handles Arabic: <http://www.lisa.org/archive_domain/newsletters/2004/4.2/redlers.html>.

I am pleased to report that a text direction command has been added by Apple in **Tiger (Mac OS X 10.4)** to both **Mail** and **TextEdit**. This means that both programs can now easily produce and display Arabic correctly, including the placement of Arabic punctuation. Mac OS X 10.4 also comes with new Arabic fonts. Visit “Unleash Your Multilingual Mac” at <<http://homepage.mac.com/thgewecke/mlingos9.html>> for updates on OS X 10.4, Tiger (build 8A428), issued 4/29/05. A similar site relating to 10.2 (Jaguar), as well as 10.0 and 10.1, and for 10.3 (Panther) are linked to that page in the introduction. (“Unleash Your Multilingual Mac” has a plethora of links to all things Arabic for the Mac including Arabic dictionaries for the Mac, a list of bundled Arabic fonts available on Mac operating systems, and companies that provide Arabic localization for handheld devices.)

One can compare the features of the latest versions of the most popular word processors built specifically for Mac OS X here: <<http://www.redlers.com/generalcomparison.html>>. This chart compares **Mellel 2.0** to **Nisus Writer Express 2.5**, **Microsoft Word X (2002)**, and **OpenOffice 1.1.2**. Of interest to the Linguist and Islamicist is the “Language Support” category in this chart. Note that this chart may not be completely correct. For example, Nisus Writer Express 2.1 had only partial Arabic support, but the newest version, **NWE 2.5**, claims to have complete Arabic support according to their web site. Therefore be sure to search the discussion forum section on Nisus Writer’s web site to discover whether or not full Arabic support is available for OS X: <<http://www.nisus.com/forum/>>. Also note that Microsoft Word X (2002) had only partial Arabic support, but the newest version, **Microsoft Office 2004 for Mac**, claims to be compatible with non-Roman fonts. However, according to Alan Wood’s web site, Microsoft Office 2004 for Mac OS X “does not support editing of right-to-left scripts (e.g. Arabic and Hebrew) or complex scripts such as Thai and the Indian languages.” Alan Wood’s web site provides the most fair treatment of the word processors and text editors that work with Mac OS X when it comes to right-to-left Arabic-script languages: <http://www.alanwood.net/unicode/utilities_editors_macosx.html>.

I have not tested the newest version of Word that is bundled within **Microsoft Office 2004 for Mac**, nor have I found comparisons between it and the newest version of **Mellel** and **Nisus Writer 6.5**, the latter of which is only compatible with **Mac OS 9.2.2** (and Classic on OS X). Microsoft says you can use most non-Roman fonts in Office 2004 built for the Mac OS X because it now supports Unicode: <<http://www.microsoft.com/mac/products/office2004/office2004.aspx?pid=highlights>>. But Alan Wood has informed us that this is still not the case for Arabic: <http://www.alanwood.net/unicode/utilities_editors_macosx.html#word2004>. For Nisus Writer 6.5 on Mac OS 9, see: <<http://www.nisus.com/NisusWriter/Features/Multilingual.php>> and <<http://www.nisus.com/NisusWriter/Features/Differences3.php>>.

Note that as of February 2006, it is not possible to transfer files with Arabic and Arabic transliteration fonts that were typed in Nisus Writer 6.5 on Mac OS 9 to Nisus Writer Express 2.5 on Mac OS X.

In order to enter **Arabic Unicode text/fonts** or **Arabic transliteration Unicode text/fonts** in Mac OS X, you have a few options, the best of which I mention here.

First, you may use the **Character Palette**, which is found in the Input Menu (the flag menu in the upper right, near the clock). For more information and detailed instructions on using the Character Palette, see Alan Wood's site: <http://www.alanwood.net/unicode/utilities_fonts_macosx.html>.

Second, you may use the excellent and extremely simple **Alt-Latin keyboard**. For instructions on how to install and use the Alt-Latin keyboard, see <<http://www.lib.uchicago.edu/e/su/mideast/encyclopedia/unicode.html>>.

Third, consider downloading **Uniqoder.dot**, a Microsoft Word add-in created by Östen Dahl in 2001 and recently modified by Hans-Jörg Bibiko: <<http://email.eva.mpg.de/~bibiko/downloads/uniqoder/uniqoder.html>>.

With regard to the **second** option for building Arabic transliteration keyboards for the Mac and Window OS, the **Alt-Latin keyboard**, built by Kino, works extremely well when entering all diacritics and odd characters in both operating systems. The downloadable ZIP file for Windows is available at <<http://quinon.com/files/keylayouts/windows/AltLatNT.zip>>, and the downloadable ZIP file for the Mac OS is available at <<http://quinon.com/files/keylayouts/AltLatin.zip>>. The parent directory can be accessed from: <<http://quinon.com/files/keylayouts/>> or at <<http://www.lib.uchicago.edu/e/su/mideast/encyclopedia/unicode.html>>.

Olaf Nelson, a doctoral student at the University of Chicago and an editor of *The Chicago Online Encyclopedia of Mamluk Studies*, has written up installation instructions and created diagrams to show where the transliteration symbols are mapped on the Alt-Latin keyboard. The benefits of this keyboard are that it works in any Unicode-aware program and that **it is available for both Windows and Mac operating system platforms**. See: <<http://www.lib.uchicago.edu/e/su/mideast/encyclopedia/alt-latin.html>> for printable HTML and PDF maps of the Alt-Latin keyboard. The corollary site with the installation instructions, also O. Nelson's creation, can be accessed at <<http://www.lib.uchicago.edu/e/su/mideast/encyclopedia/unicode.html>>.

Finally, for instructions on how to **create your own keyboard layout for Mac OS X**, see <<http://listserv.linguistlist.org/cgi-bin/wa?A2=ind0511C&L=ARABIC-L&P=R270&I=-3>>. Alternatively, <<http://homepage.mac.com/somadevah/Software.html>> has loads of typographical software for Mac users, and Macsters who can read Arabic should consider this resource for further help: <<http://www.mac4arabs.com/>>.

⁶ Of value is Brian Whitaker's easy-to-follow introductory guide to Arabicization available online at: <<http://www.al-bab.com/arab/comp.htm>>. Because Microsoft continues to support Windows 2000 and Windows XP, they have instructions of their own for enabling international language support in these two versions of Windows. Their instructions are extremely helpful due to their use of screen shots to guide users through this process. If you want to add Arabic support to Windows 2000, Windows XP, Windows XP Tablet PC Edition, or Windows XP Server 2003, I encourage you to read

the appropriate site below first. For Windows 2000, visit
<<http://www.microsoft.com/globaldev/handson/user/2kintl supp.msp x>>.

For Windows XP and Windows XP Server 2003, visit
<<http://www.microsoft.com/globaldev/handson/user/xpintl supp.msp x>>. For Windows XP Tablet PC Edition, visit <<http://www.microsoft.com/middleeast/arabicdev/Windows/winXP/wPapersTP.asp>>.

⁷ *N.B.*: All instructions reflect a classical layout of the Windows operating system and do not conform to the Windows XP enhanced layout.

⁸ Microsoft Office Proofing Tools 2003 are available here for purchase:
<<http://www.microsoft.com/products/info/product.aspx?view=22&pcid=071b9ced-ed82-47ef-b5fa-a42ecbdec9b7&type=ovr>>. This newest 2003 Proofing Tools CD is equipped with:
<<http://www.microsoft.com/office/editions/prodinfo/language/proofingtools-table1.msp x>>. The below web site details **what's new for Arabic in Office 2003** in addition to extra on-line Arabic features:
<<http://www.microsoft.com/middleeast/arabicdev/office/>>.

⁹ Since the Unicode compliant, fully searchable **Arabic Typesetting** font in addition to the Arabic Proofing Tools for Microsoft Word 2003 has entered the market, Microsoft has begun eating into the market share of stand-alone Arabic word processing programs like Arabica
<http://216.239.39.104/translate_c?hl=en&u=http://www.arabica-online.com/index_de.php&prev=/search%3Fq%3Dori.unizh.ch,%2B%2Boriental%2Bfont%26hl%3Den%26lr%3D%26rls%3DRNWE,RNWE:2005-32,RNWE:en>, Universal Word
<<http://www.wysiwyg.com/>>, and localization programs such as those sold by <<http://www.sakhr.com>>.

¹⁰ “Arabic Type: a challenge for the 2nd millennium” by Huda Smitshuijzen AbiFares
<http://www.sakkal.com/articles/Arabic_Type_Article/Arabic_Type1.html> provides the necessary background to the chronological and philosophical development of Arabic type fonts.

¹¹ Which Romanization, or transliteration, system is best? What are the benefits of using one system over another? Where can the different Arabic transliteration tables be found? The most comprehensive arrangement of this information is on Brian Whitaker's Arab Gateway Meta web site, <<http://www.al-bab.com/arab/language/roman1.htm>>. The best comparison chart of the different popular transliteration systems can be found in PDF format here:
<<http://transliteration.eki.ee/pdf/Arabic.pdf>>. Also useful are the following links. The first links to standard US government Romanization tables: <<http://www.loc.gov/catdir/cpsso/roman.html>>. The second is an Arabic transliteration table in PDF comparing European systems:
<http://islamwissenschaft.uni-hd.de/material/tutorium_ws0506/transkription.pdf>. The third is an HTML list of different languages and their standard transliteration tables compared:
<<http://transliteration.eki.ee/pdf/>>.

With regard to adding diacritics and creating transliteration fonts for the Mac, consider downloading Uniqoder.dot, a Microsoft Word add-in created by Östen Dahl in 2001 and recently modified by Hans-Jörg Bibiko: <<http://email.eva.mpg.de/~bibiko/downloads/uniqoder/uniqoder.html>>. This program also works within Windows platforms, although I have not tested it within Windows. For universal transliteration keyboards for both the Mac and Window operating systems, the **Alt-Latin**

keyboard, built by Kino, works extremely well when entering all diacritics and odd characters in both operating systems. See step **9b.viii** above for more details.

¹² Many professors and students will not need to purchase the **Arabic Typesetting** font or the Office 2003 Proofing Tools CD because their universities or home departments may maintain a site license for it through Microsoft. Check with your university computing services office.

¹³ For an understanding of the issues related to Unicode and Arabic Romanization/ transliteration fonts used in Microsoft Word 2000, see “Software and Technology Review: Multilingual Computing in Middle East Studies” by Josef W. Meri available here: <<http://fp.arizona.edu/mesassoc/Bulletin/meri%20software.htm>>. Also visit the Middle East Medievalists’ multilingual computing resources page here <<http://www.middleeastmedievalists.org/compute.html>>.

¹⁴ Some of the Islamicate/ Arabic script languages supported include Arabic, Persian, Ottoman Turkish, Adighe, Baluchi, Berber, Dargwa, Ingush, Kashmiri, Kazakh, Kirghiz, Lahnda, Maghrib Arabic, Old Hausa, Old Malay, Pashto, Sindhi, Tunisian Arabic, Turkic, Uighur, and Urdu. Archaic Arabic letters, Qur’anic annotation signs, Arabic cursive positioning, Arabic ligatures, and full justification (tatwil) are also supported. Note that more Unicode fonts for South Asian languages can be found at the University of Chicago’s impressive South Asian languages resources web site here: <<http://salrc.uchicago.edu/resources/fonts/main.html>>.

¹⁵ Microsoft Office Proofing Tools 2003 are available here for purchase: <<http://www.microsoft.com/products/info/product.aspx?view=22&pcid=071b9ced-ed82-47ef-b5fa-a42ecbdec9b7&type=ovr>>. This newest Proofing Tools CD comes equipped with: <<http://www.microsoft.com/office/editions/prodinfo/language/proofingtools-table1.msp>>. The below web site details **what’s new for Arabic in Office 2003** in addition to extra on-line Arabic features: <<http://www.microsoft.com/middleeast/arabicdev/office/office2003/>>.

¹⁶ See my article, “Teaching Arabic with Technology: Word Processing, E-Mail, and the Internet” in *A Handbook for Arabic Language Teaching Professionals in the 21st Century* (Mahwah, NJ: Lawrence Erlbaum Associates, 2006) for more details the pros and cons of the Arabic Typesetting font.

¹⁷ We all know by now that file types (.extensions) are not universally interchangeable. An excellent summary of the multifarious file types and the programs associated with them, as well as an analysis of the best formats for universal document exchange can be found here: <<http://www.cv.nrao.edu/~pmurphy/doc-interchange.shtml>>.

¹⁸ Adobe Acrobat is providing a free trial for creating PDFs using their downloadable program here: <<https://createpdf.adobe.com/>>. Note that PDF creation will come packaged with the next retail version of Microsoft Word for PCs running Windows. Also, kudos to Apple for making automatic PDF creation possible in Mac OS X without needing to install or buy anything extra.

¹⁹ If after PDFing a document embedded with Arabic fonts, the fonts appear garbled, be sure to try the following steps to solve the problem. Left click on Start, next left click on Settings, and then left click on Printers. Right click on PDF995 and select Properties. Left click on the Fonts tab. Then left click on the button that says, “Always use TrueType fonts” for font embedding. Next left click on the box that reads, “Send Font As...” Finally select Bitmaps in the drop down menu beginning with “Send TrueType font as: Bitmaps.” You should also check the box that reads, “Favor system TrueType fonts over printer fonts that have the same name.” Left click the OK box and then the Apply box to save the changes and to exit. These steps should now allow you to create PDF documents with ease.