

tional language is *not* the same as changing the language of the user interface. If you want all your menus and so forth in German, that is an additional step.

Additional Keyboard Resources

Tom Gewecke has created keyboards for many languages in addition to those provided by OS X. They can be found at <http://homepage.mac.com/thgewecke/tckbs.html>. He also has a general “Multilingual Mac” page at <http://homepage.mac.com/thgewecke/mlingos9.html> and a blog at <http://m10lmac.blogspot.com/>, both of which are excellent sources of information about using the Mac OS when writing in languages other than English.

Third-party Utilities

You can use third-party utilities such as the well known PopChar to check out and enter characters; see <http://www.macility.com/products/popcharx/>), where a demo version is available.

The Unicode Checker utility from earthlingsoft does a few things that Character Palette doesn’t, such as convert Unicode values to HTML entities or help with normalization issues. In some ways it is more convenient than the Character Palette. See <http://earthlingsoft.net/UnicodeChecker/index.html>.

See also the discussion of GreekKeys in §7.3, page 131.

Warning for Mac Users!

Be careful not to log out while using a keyboard that does not allow you to enter your password in order to get back in — for example, logging out when a Hebrew or Greek keyboard is in effect if your password requires Latin characters.

4.2 Operating System Support: Windows

ALT-key Methods

Windows, by contrast, provides two system-wide methods for accessing non-English characters, both of them clumsy. You can turn on the NUM LOCK key, hold down the ALT key, and type, on the numeric keypad at the right of the keyboard, the four-digit ANSI number of any character. For example, to get an upside-down question mark in Spanish, you would type ALT-0191 (after checking to make sure the NUM LOCK key is depressed). You must use the numeric keypad not the the regular numerals on the top row of the keyboard. You have

The original decimal method.

to keep a chart of ANSI numbers handy, of course (see Appendix II for the pre-Unicode character set, with the numbers). For Unicode characters, you can use the ALT-key method also — but you must first convert the Unicode value from hexadecimal to decimal. The Windows calculator applet can do this for you. But who wants to bother? Also, this does not always work due to conflicts with various input languages or code pages.

The newer hexadecimal method.

Because it's easier to work directly with hexadecimal Unicode values, Windows 2000 and more recent provide another method. Note that with this procedure it does not matter whether or not NUM LOCK is turned on.

- Depress and hold the ALT key; the left ALT will probably be more convenient, if your keyboard provides two.
- Type the plus sign on the numeric keypad; nothing will happen on your screen.
- Enter the hex value of the Unicode character. You have to use the main keyboard for letters, but you can (at least in Vista) use either the numeric keypad or the main keys for numbers. It does not matter whether you include leading zeros (i.e., either 031B or 31B will give you a COMBINING HORN), and you can use lowercase letters for more convenient typing.
- Let go of the ALT key. If you see a blank box, that means the font you are using does not support the character you just entered.

Enabling the ALT-PLUS method in the Registry.

If the ALT-PLUS method does not work, it is probably because a value in the Registry was never set or was somehow changed. (On my own Vista system, it was never set.) Windows provides a utility called RegEdit that allows you to fix this, but *be careful*; working with the Registry can cause serious problems if not done correctly.²

- Run RegEdit.exe using a command prompt or the Start menu.
- Expand HKEY_Current_User to /Control Panel/Input Method.
- Locate the key called EnableHexNumpad. If it is not there, create a new string value for it; it must have the REG_SZ type.
- Right-click and change EnableHexNumpad so that it has the value of 1.
- Close RegEdit.

The ALT methods are not elegant, but they have the distinct advantage that they should work in all Windows applications.

²Thanks to Brian Livingston and Paul Thurrott's book *Windows Vista Secrets* (Wiley Publishing, 2007) for the Registry hack. I suggest backing up the registry before making any changes; here is how to do it for Windows XP: <http://pcsupport.about.com/od/windowsxp/ht/backupxpreg.htm>, and here are simple directions for Vista: <http://www.adamsdvds.co.uk/tutorials/vista/regedit/backup.php>.

Windows Character Viewers

Windows provides the Character Map applet, which you can access with Start Menu ► All Programs ► System Tools ► Accessories. Compared to Mac OS X's Character Palette, it is very limited. Even the version of Character Map that ships with Vista has not been updated to handle supplementary characters (first enabled in Windows 2000 — a decade ago), nor does it provide most of the additional information that Character Palette gives the user.

As an alternative for serious multilingual work, I heartily recommend the BabelMap applet by Andrew West, <http://www.babelstone.co.uk/Software/BabelMap.html>. It is free and very efficient. See Figure 4.4. In addition to locating and inserting characters, BabelMap provides a great deal of information about characters and includes a font analysis utility that helps you know what characters are available in a given font, and much more. If you want to keep it easily accessible without having it open all the time, pin it to the Start menu. To do this, locate the BabelMap.exe file (wherever you stored it after you downloaded it), right-click on it, and choose “Pin to Start Menu”).

There exists also a Windows version of the shareware utility PopChar, available from http://download.cnet.com/PopChar/3000-2316_4-10266356.html. It sits conveniently out of the way in the taskbar until you want it (see the screen shot in Figure 4.8).

Another useful viewer is SIL ViewGlyph. This lets you view all the characters in a font in different ways as well as providing some technical information about the font (the name and cmap tables and font metrics) plus other things. It is downloadable from http://scripts.sil.org/ViewGlyph_home.

Enabling Additional Keyboards and Languages

The US-International Keyboard

For American users: if your application does not provide its own keystrokes for non-English characters, or if you are looking for a set of keystrokes that will work in all your Windows applications, an excellent alternative is to install the US-International keyboard. The US-International keyboard provides easy access to many multilingual characters for western European languages along with some symbols. To install it:

- Activate the Start menu and open the Control Panel.
- Double-click the Regional and Language Options.
- Choose the Keyboards and Languages tab, then click on Change Keyboards (see Figure 4.6 on page 80).

Tech Note: More Keyboard Issues

As mentioned above, if you choose a keyboard layout that does not match the physical keyboard you use, you will have to deal with the mismatches. A standard French keyboard begins AZERTY at the upper left, so on a keyboard manufactured in the U.S. you would type the ‘q’ key to produce an ‘a’ while the French keyboard was in effect.

This applies not only to regular typing but also to specialized keyboards that were developed for scholarly use. A French user working with a layout developed by an American that maps GOTHIC LETTER AHSA to the ‘a’ key would have to remember to type a ‘q’ on his keyboard. This seriously limits the usefulness of many specialized keyboard layouts.

Windows keyboards developed for use with Tavultesoft Keyboard Manager (Keyman; see page 85) do not suffer from this problem, since Keyman takes care of remapping the keys chosen by the developer to their actual locations on the hardware in use.

Figure 4.4: Andrew West's BabelMap utility. The colors show in which version of Unicode the characters were added; this can be changed to highlight different information. Below the large grid there are controls to view characters by Unicode range, to search by character name, or to go to a specific codepoint. Clicking on a selected character puts it in the box at the bottom, where you can show the actual glyph, the Unicode value, or how to enter it into an HTML document.

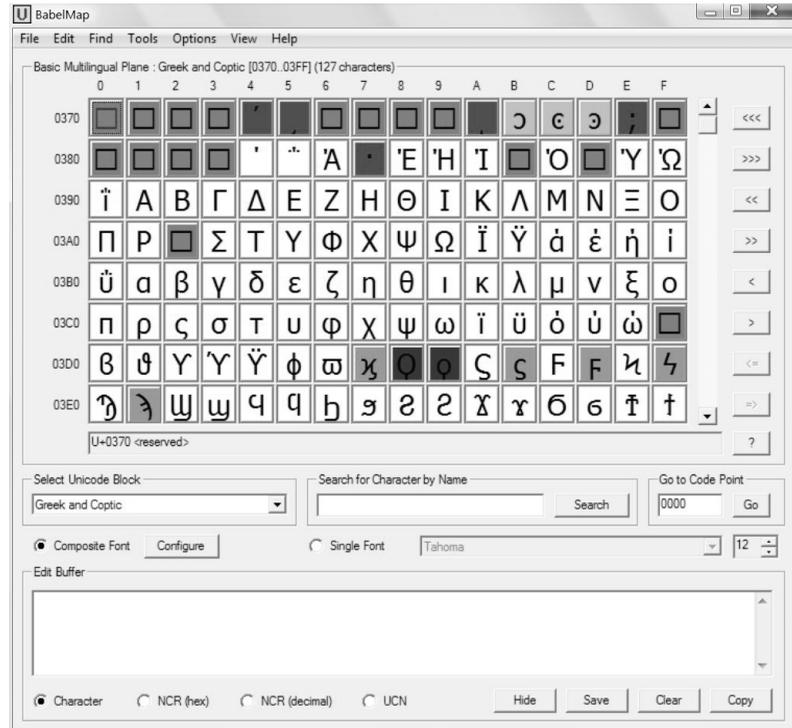
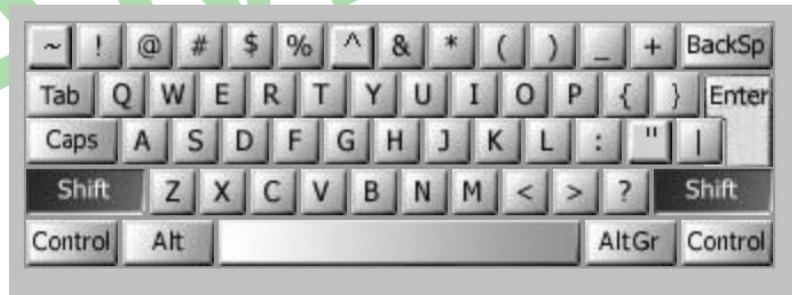


Figure 4.5: Two views of the US-International keyboard. The upper shot shows the keyboard with **SHIFT** depressed, revealing that there are three deadkeys available in this state: the tilde, the circumflex, and the umlaut (via the double quote key). They unshifted layout has two deadkeys, the grave accent and the acute (via the single quote / apostrophe key). The lower shot shows some additional symbols accessible by pressing the **ALTGR** key.



- If you are an American, you will see English as the first language. Click the Add button and scroll down the list of languages until you see English (United States). Choose US-International and click OK; you may need to have your Windows CD-ROM in the drive so that Windows can copy the keyboard file.

The US-International keyboard does have one minor drawback: if you type an opening double quotation mark followed by a vowel, you will get an unlauted vowel. The solution is to hit `SPACEBAR` after typing the opening quotation mark. Some of the characters available via this keyboard are shown in Figure 4.5 on page 78.

Adding Other Languages and Keyboards

You can of course work in more than one language in Windows; in addition, you can enable multiple keyboards for a given language, if Windows ships with more than one or if you create your own keyboards. To install additional languages and/or keyboards:

- Choose Control Panel ► Regional and Language Options.
- Click the Keyboards and Language tab, then the Change keyboards . . . button (see the screen shot in Figure 4.6).
- Under the General tab, click the Add button to enable additional languages; a dialog box similar to that shown in Figure 4.7 will appear.
- Choose the keyboard layout(s) you want; (note that you can see a preview of the keyboard layout by clicking on the Preview button³); then close the dialog.
- You are now back in the General tab; before leaving this dialog, you may want to adjust the Language Bar options or the keyboard shortcuts.
- The Language Bar gives you quick access to all languages and keyboards that you have enabled. It can either be a small toolbar that you can park anywhere or be minimized in the taskbar. See the screen shots in Figure 4.8.

³The keyboard previews available while you add languages are somewhat limited. Better views of the keyboard layouts are available on Microsoft's website, <http://msdn.microsoft.com/en-us/goglobal/bb964651.aspx>. You can choose any keyboard that ships with Windows XP or more recent and see how the keyboard functions in plain, shifted, AltGr, or shifted AltGr states. Deadkeys are highlighted and if you put your cursor over a deadkey you can see the keys to which the deadkey applies. The screen shots on page 78 and pages 197 and 198 provide samples of these Microsoft layouts. You can copy them and paste them into a document if you wish to print them.

Historical Note: Deadkeys

The term "deadkey" originated during the days of typewriters. A deadkey printed an accent mark on the paper but did not advance the patten (the long roller around which the paper was wound and which moved sideways as the user typed). Since the patten did not move, the next letter typed would appear under the accent just entered.

The typewriter model of typing the accent first, followed by the base letter, was adopted for computers. (There is, of course, no reason that one could not type the letter followed by the accent, if the software were programmed that way; and this is occasionally done.)

The term deadkey is also appropriate to computers, since nothing usually appears to happen when one types a deadkey until an appropriate subsequent letter is pressed. (OS X, unlike Windows, displays the accent after the `OPTION` key is pressed, while waiting for the base character to be typed. This is helpful, particularly for users unaccustomed to entering multilingual characters.)

If one wishes to get the deadkey itself (e.g., to enter "This is a tilde: ~," the convention is to hit `SPACEBAR` after the deadkey.

The manual for Nisus Writer calls deadkeys "delayed response keys," a term I have not seen elsewhere. A euphemism? More politically correct? I'll call them deadkeys.