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Understanding Font Substitution in Word: Part 1

Brett Lockwood

In this two-part article, Brett Lockwood explains how font substitution occurs in Microsoft Word documents, how to check for substitution, and how to reduce or avoid problems caused by substitution.

It is very easy to use fonts in a Word document without knowing what occurs when the document is subsequently opened on a computer that does not have the same fonts installed. When this happens, Microsoft Word substitutes fonts on the destination computer for the fonts that were specified on the source computer, to enable the document to be used. This is a little-known process.

The procedures in this article have been checked for versions of Word up to and including Word 2000 (PC) and Word 2001 (Mac)

The Background

Font substitution is happening more frequently. An increasing number of people are using Word to prepare material for all types of publications, from books to community newsletters. Many of them work outside the traditional publishing sphere, as administrative staff, publicity officers, or community group members. Similarly, more people are now using desktop publishing applications such as QuarkXPress, PageMaker, and more recently InDesign, than was true even a few years ago. These are applications into which Word files can be imported and which comprise the final publishing vehicle.

Also, using Adobe Acrobat to create PDFs from Word documents - in other words using Adobe Acrobat as a publishing vehicle - is becoming commonplace. Also, the pervasiveness of e-mail means that people can exchange Word documents with ease, instead of having to transport them physically on media like floppy disks - which (in hindsight) once restricted the movement of electronic documents between users - and this means that more Word documents are being used on (and printed from) computers other than the original source computer.

In addition, there is now a huge range of fonts for use, particularly TrueType fonts, many of them freely available, and a user can easily have fifty or more fonts installed on a computer. Another point is that TrueType fonts (the standard Windows fonts) and PostScript fonts (traditionally used in desktop publishing applications) that are installed on the same computer will often appear as a combined listing in the font drop-down list on the Formatting toolbar in Word, causing PostScript fonts to be used in a document by people who may not - and often do not - realise the implications.

Word Doesn't Alert You

When these apparently isolated factors are combined, one upshot is that more and more Word documents are now opened on computers that don't have some or all of the document's fonts, and then Word - very quietly, without telling you - uses font substitution to enable the computer to display the document text and print it.

In a manner of speaking, Word says, "Look, you're asking me to use the Palatino font for this document, but it's not here, so I'm going to try and help you out by using Book Antiqua to display and print text that is set in Palatino - but no promises, mind you, so if there are a few errors in the conversion, and if the page layout changes as a result, don't come running to me with your complaints, and because this whole thing can be a little dicey at times, I'm not even going to tell you what I'm doing". There's a bit of Gollum in Word.

It Can Cause Errors

Font substitution can cause text errors in a document. It can also cause confusion for the user, because (substituted) fonts used to display and print the text will be different to the (missing) font names indicated in such places as the Font box on the Formatting toolbar (if the cursor is placed into text formatted with a missing font) or in the Font dialog box for the same text Format|Font on the main menu). The names of missing fonts remain in the document and appear in these locations.

Substitution and Styles

There is another major factor making font substitution more likely now than it used to be. Word styles are increasingly being used to format documents, and a font is a basic element of a style (a style must contain a font name as part of its description). In conjunction with this, Word templates are increasingly being used, particularly templates containing styles. Templates are a special type of document. They have a .dot extension, and can supply components such as text, styles

and toolbars to a "standard" document (by being linked to the latter). A template is often designed on one computer and then used on several other computers. These other computers may have only some, or may not have any, of the fonts applied to the text (if any exists) held in the template, or contained in style specifications stored in the template.

Font substitution occurs when a "standard" Word document or a Word template is opened on a computer that does not have installed on it all of the fonts specified in that standard document or template. I use the word "specified" rather than "used" because text does not have to be tagged with a style (a font does not have to be "used") for that style to cause substitution.

Font substitution can be complicated, but checking for the presence of substitution is simple. The aim of the material presented here is not so much to provide solutions to all possible problems, but to provide alerts to the types of problems that can appear.

Font Mapping

When font substitution occurs a process known as font mapping is applied. This means that Word automatically replaces missing fonts with fonts from the "destination" computer that it assesses as being "similar". This occurs as the document is opened. For example, the Times font in a Mac Word document may be replaced with the Times New Roman font when the document is opened on a PC. You are not notified if font substitution occurs. Unexpected or strange characters or symbols appearing in the document represent the typical type of error encountered. One example I have experienced is (about three hundred instances of) an opening quotation mark (") being replaced by the character é.

Also, font substitution can cause a document to paginate differently than it did originally (page breaks occur in different places), because the font metrics (size characteristics) of the two fonts will probably differ. Often, the exact layout of a Word document is not important to the user. Nonetheless, the preservation of page layout can be important, particularly where the final format is to be a PDF document published directly from Word.

The Dimensions Of Substitution

There are three dimensions to font substitution.

Firstly, substitution can occur with any document in three ways:

1. where text in a document is directly formatted with a font (normal text use)
2. via style descriptions
3. where a symbol is inserted from a font using Insert|Symbol and using the Symbols tab.

Secondly, font substitution can happen with documents that are:

1. used on one PC and opened on another PC
2. used on one Mac and opened on another Mac
3. exchanged between Macs and PCs, and vice versa.

Thirdly, font substitution can happen:

1. with "standard" (.doc) files (documents)
2. with standard documents linked to templates (.dot documents) (whether the document-template link is established by creating a document from a template or attaching a document to a template).

All this means that the only necessary criterion for the occurrence of font substitution is that one or more fonts specified in a standard Word document or a Word template cannot be found on the computer on which it is opened.

Font Versus Character Set Issues

When a document is opened in Word, symbols are converted into characters using a process called a "character definition standard", a method of defining a character set. Word uses a relatively new character definition standard named Unicode. Other word processing applications and other Windows applications use other character definition standards.

For example, WordPerfect uses a character definition standard called OEM. The result is that when a document created in another application is opened in Word, character sets may not map correctly, especially symbols and characters other than standard keyboard characters. For example, the fraction 1/4 in a WordPerfect document can convert to the numeral 3 in Word.

This is a process separate from font substitution. From the perspective of the present article, the main point about character set mapping is that when a document is opened in Word, text errors may result that are not due to font substitution. Also, it can be difficult to tell whether a text error is due to font mapping or character set mapping.

However, this does not detract from the value of understanding how font substitution occurs, and learning how to minimise it, make allowances for it, or prevent it.

Checking For Substitution

To check for font substitution in a document, open it and use one of the following menu sequences:

- Word PC and Word 98 Mac: Tools | Options, Compatibility tab, then click the Font Substitution button.
- Word 2001 Mac: Edit | Preferences, Compatibility tab, then click the Font Substitution button.

Figure 1 shows the Options and Font Substitution dialog boxes for a Mac document opened on a PC and containing fonts not installed on the PC.

You need to keep in mind the logic of this process when checking documents for font substitution. Remember that Font Substitution dialog box information may vary if you open a document on one computer and then on another computer. For example, if a document containing Marlett is opened on a computer that does not have Marlett installed, Marlett will be listed as a missing font. If the document is then opened on a computer that has Marlett installed, Marlett will not show up as a missing font.

The Font Substitution box allows you to change substituted fonts, or permanently replace a missing document font with a substitute font. You should be careful about using either of these features (more on this next month). Figure 1 is presented primarily as a means of showing how you can confirm whether font substitution has occurred, and how you can make sense of document text being displayed in different typefaces to those you expect.

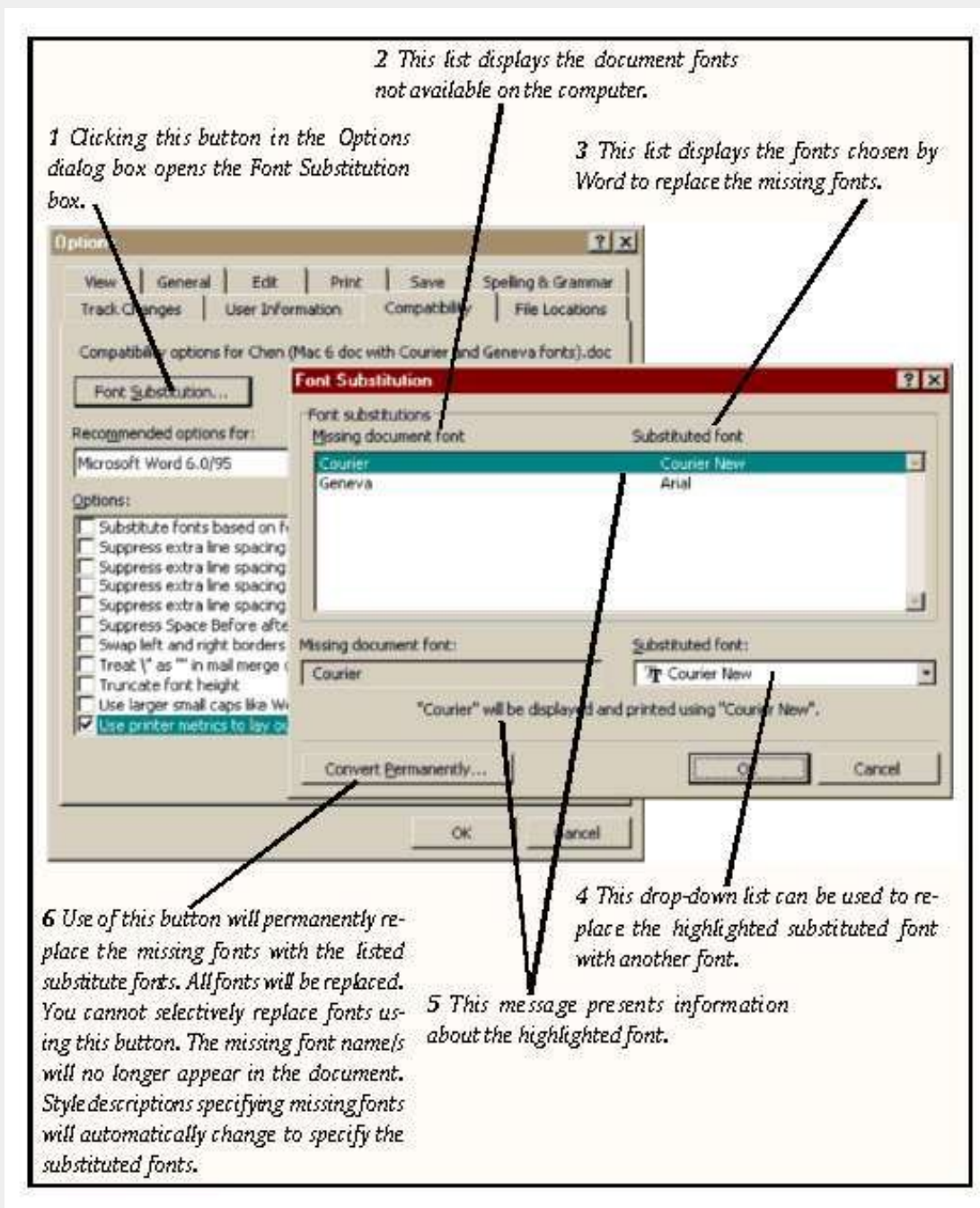


Figure 1. Checking for the presence of font substitution: a Mac document opened on a PC and containing fonts not installed on the PC.

So, if strange characters appear in a document, or the layout is different to what is expected, the Font Substitution dialog box may be a good starting point for diagnosing the problem. If this process is important to you, it can be good practice to

check for font substitution whenever you receive a document to work on. A surprising proportion of the documents I get have a missing font list.

And what happens if no font substitution is required? If all the fonts in a document are installed, clicking the Font Substitution button in the Options box does not produce the Font Substitution box. Instead, a message is generated saying that no substitution is needed (Figure 2).



Figure 2. If no font incompatibility exists, clicking the Font Substitution button produces a message to this effect.

Feedback on this article is welcome.

Part 2 of this article will discuss ways of minimising substitution, the various aspects of viewing substituted fonts, and the permanent conversion of substituted fonts.

About The Author

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