A Chemist's View of WordPerfect for Windows

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The DOS version 5.1 of WordPerfect for the IBM, released by WordPerfect Corp. in November of 1989, has become a valuable tool for chemists in preparing scientific documents, primarily because of features like symbols, macros, graphics, tables, cross references, and equation editor.[1] With the release of WordPerfect for Windows,[2] chemists can now enjoy an even higher level of power, flexibility, and efficiency in creating scientific documents.

REQUIREMENTS FOR RUNNING WORDPERFECT FOR WINDOWS

WordPerfect for Windows, like other applications software that runs under Microsoft Windows,[3] provides a mouse-based graphical user interface with icons, windows, and pull-down menus. Although this interface makes applications software easier to learn and in some cases easier to use than the typical character-based interface, the Windows operating environment requires large amounts of disk space and computer memory. The *minimum* hardware required to run Windows version 3.1 is a personal computer with an 80286 microprocessor, 640K of conventional memory plus 256K of extended memory, 6 MB of disk space to hold the Windows programs and data files, one floppy disk drive, and an EGA graphics adaptor and monitor. Realistically, however, productive use of WordPerfect for Windows requires a computer with an 80386SX microprocessor or better (such as a 33-MHz 80386DX or a 80486 processor), 640K of conventional memory plus at least 3 MB of extended memory (preferably a total of 8 MB of total memory), a VGA or SuperVGA graphics adaptor and monitor, a mouse input device, and a large hard disk.[4] The complete Windows 3.1 system requires about 10 MB, and WordPerfect for Windows requires another 9 MB of disk space.

COMPARISON OF WORDPERFECT FOR DOS AND FOR WINDOWS

Chemists familiar with WordPerfect for DOS will be able to make an easy transition to WordPerfect for Windows. Those familiar with the WordPerfect for DOS pull-down menus will find that the Windows pull-down menus are similar. Those familiar with the function-key template of the WordPerfect for DOS can choose to use the "DOS Compatible Keyboard Template", which is similar, but not identical, to the WordPerfect for DOS template. Those who want a more standard Windows function-key interface can use WordPerfect's default "CUA Compliant Keyboard Template". The CUA (Common User Access) function keys have the advantage of being common to most Windows applications.

The document formatting features available in WordPerfect for Windows are exactly the same as those available WordPerfect for DOS. Thus, the file format of documents produced by the two versions of WordPerfect are identical. Documents created using one version can be retrieved and edited by the other version without going through a file-conversion utility. This is convenient in offices and laboratories where some workers are using WordPerfect for DOS and others are using WordPerfect for Windows.

The main difference between the two versions, therefore, is not in the availability of *formatting* features but in the *editing* features, that is, in the methods used to access, implement, and modify the document text and format. The new Windows editing features include different keystrokes, mouse commands, and screen display involved in creating, formatting, editing, saving, retrieving, managing, previewing, and printing documents; in defining and using macros and styles; and in implementing other word processing functions.

EDITING FEATURES OF WORDPERFECT FOR WINDOWS

WordPerfect for Windows provides important new editing features that should interest chemists.

WYSIWYG Display. The document edit window in WordPerfect for Windows is a graphics display so that the program supports a so-called "What-You-See-Is-What-You-Get" (WYSIWYG) edit screen. Thus, justified text appears with text aligned along the right margin; fonts styles (like Times and Helvetica) and font attributes (like bold and underline) appear on the screen more or less as they will appear on the printed page; mathematical symbols (like $\pm$, ∞, and $\sum$), Greek letters (like α, θ, and λ), and other chemical and scientific symbols (like $\rightarrow$, ∇, and Å) are visible on the edit screen. Furthermore, equations, graphics, superscripts, and subscripts are visible on the edit screen. Figure 1, for example, shows the WordPerfect for Windows edit screen with a scientific document in the edit window.

The WYSIWYG display, however, is not perfect. For example, very small fonts, including superscripts and subscripts, are sometimes hard to read on the edit screen because the graphics monitor resolution is lower than laser printer resolution. Furthermore, the screen fonts are sometimes not quite the same size and appearance as the printer fonts, and therefore the printed page sometimes looks different than expected.

Furthermore, the edit screen does not display such features as footnotes, endnotes, headers, footers, and page numbering. To see these features before printing a document, WordPerfect provides a Preview mode. Preview not only shows all page features but also seems to be more accurate than the edit window in showing relative locations of words, characters, graphics, and other features. The Preview window supports Zoom In and Zoom Out, so that the user can get a close up view—up to 400% of the actual size—or a far away view—down to 65% of the actual size so that an entire page appears on the screen at once.

WordPerfect Character Window. With WordPerfect for DOS, inserting special characters (like $\geq$, π, and $\div$) requires that the user memorize, or look up in the reference manual, character numbers and character-set numbers for use with the **Compose** (Ctrl+2 or Ctrl+V) command. With WordPerfect for Windows, on the other hand, the user simply selects

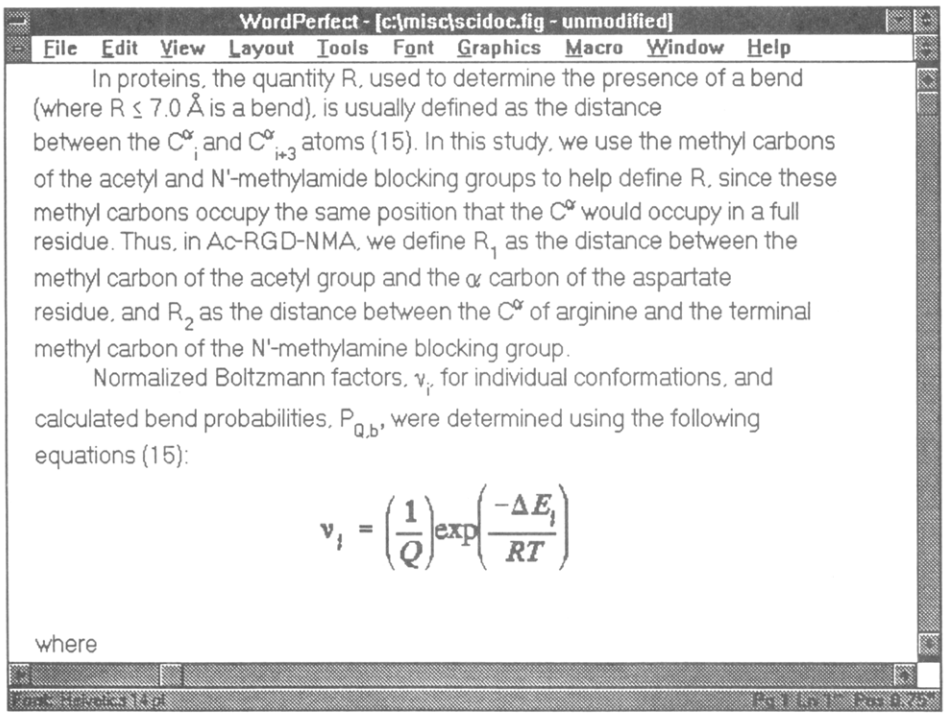

Figure 1. The WordPerfect for Windows edit window, showing the WYSIWYG feature. Notice that subscripts, superscripts, Greek letters, and equations are visible in the edit window.

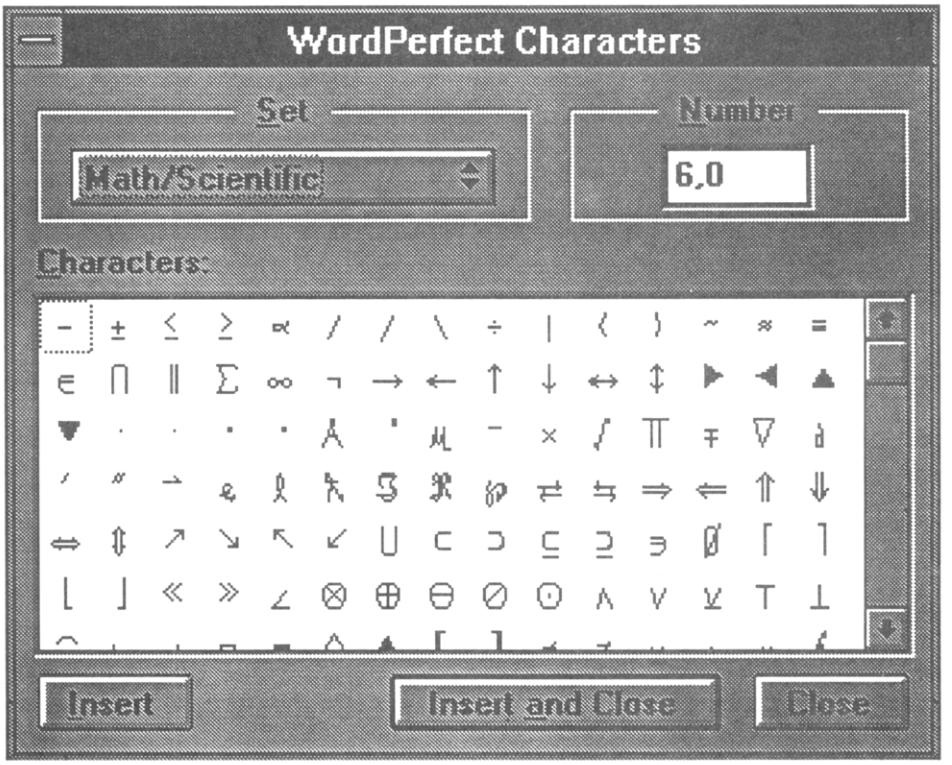

Figure 2. The WordPerfect Characters Window.

WP Characters from the **Font** pull-down menu to display a window of special characters (see Figure 2) and then clicks the mouse pointer on the desired character. This increases the efficiency and accuracy of inserting chemical, mathematical, and other scientific characters.

Ruler. Like other Windows work processors, WordPerfect supports a Ruler (see Figure 3) that allows the user to efficiently change the margins, the tab stops, the font styles and sizes, the line spacing, and the justification, and to perform other formatting operations. The user clicks on the desired feature or drags (using the mouse pointer) the icons representing margins and tab stops to the desired locations along the ruler, and at the same time observes the changes being effected in the document.

Button Bar. An innovative feature of WordPerfect for Windows is the Button Bar (see Figure 4), which displays common commands, such as Open, Close, Save, and Print. With the Button Bar, the user can invoke these commands simply by clicking on the desired button rather than by using the more cumbersome pull-down menus. The user may add any desired WordPerfect feature to the Button Bar or remove any unwanted feature. (The removed commands are still

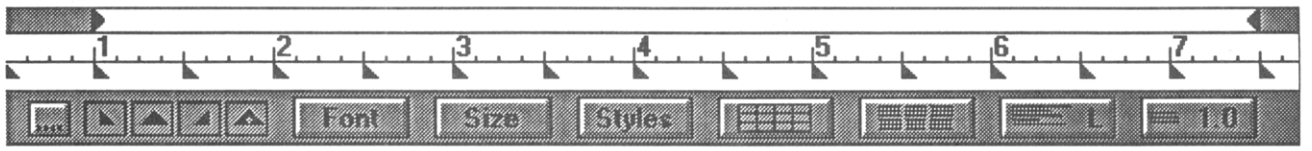

Figure 3. The Ruler. Small triangles mark the location of margins and tab stops. Other buttons allow users to change font styles, font sizes, and formatting styles, to create tables and columns, and to set the justification and line spacing.

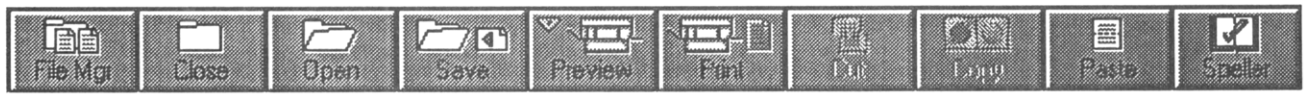

Figure 4. The Button Bar. Clicking a square button on the Button Bar executes a WordPerfect command or a user-defined macro.

available through the normal function keys or pull-down menus.) The user can also add user-defined macros to the Button Bar so that the macros can be executed by a simple click of the mouse.

WordPerfect for Windows supplies a special Button Bar for creating and editing tables. This greatly increases the efficiency of creating tables, which, without the Button Bar, are more difficult to edit than in WordPerfect for DOS. A previous review[1] provided details on the advantages of WordPerfect tables.

Insertion-Point Movement Keys. WordPerfect for Windows supports a rich array of insertion-point (cursor) movement keys. Besides the normal arrow key and Ctrl+arrow key commands with which WordPerfect for DOS users are familiar, the Windows program supports new Ctrl+arrow commands (for example, Ctrl+Up arrow moves to the beginning of the previous paragraph); Alt–arrow commands (for example, Alt–Up moves to the previous outline paragraph and Alt+Right moves to the next column when columns mode is on); Ctrl+Shift+arrow commands (for example, Ctrl+Shift+Up arrow selects (blocks) from the insertion point to the beginning of the paragraph); and Alt+Shift+arrow commands (for example, Alt+Shift+Right arrow selects (blocks) from the insertion point to the next outline paragraph number). The mouse I-beam and the windows scroll bars also increase the efficiency of moving through, and viewing different parts of, the edit document.

Macro Programming Language. Creating advanced macros in WordPerfect for Windows is much like writing a computer program in Pascal or FORTRAN. Rather than macros being recordings of keystrokes combined with macro programming commands that modify the program flow, the new WordPerfect for Windows macros are tokenized; that is, the macros contain tokens (key words) that execute WordPerfect commands, display menus, change program flow, and perform other programming tasks. The macro language supports IF, WHILE, FOR, FOR EACH, REPEAT, UNTIL, CALL, and RETURN (for using subroutines), and other common programming structures.

Figure 5 shows an example WordPerfect for Windows macro. This macro inserts a number in scientific notation into the document. In this macro listing, the key words are shown in boldface type. When the user executes this macro, WordPerfect displays a menu asking for the number (coefficient), displays another menu asking for the exponent, and then inserts the complete scientific number using a true times sign (× rather than x), true minus sign (– rather than -), and hard spaces on each side of the times sign so that the entire number always stays together on the line of text.[5] Without using the macro, typing the number 1.67×10^{-27} (the resting mass of a proton in kilograms), with true times and minus signs and with hard spheres, would require at least 30 keystrokes and/or mouse clicks. Typing the same number

```
// SCI.WCM: Inserts a number in scientific notation
// by S. Scott Zimmerman, Brigham Young University

Application (WP;WPWP;Default;"WPWPUS.WCD")
GetString(NumberStr;"Type number";"Number")
GetString(ExpStr;"Type exponent";"Exponent")
STRNUM(Number;NumberStr) //Convert the string to a number
STRLEN(NumLen;NumberStr) //Get the length of the string
//Check if number is negative; if so, insert negative sign:
IF(Number<0)
     SUBSTR(NumberStr;2;NumLen-1;NumberStr)        //Remove dash
     TypeChar(CharacterSet:4;CharacterOffset:33)  //Minus sign
ENDIF
Type(NumberStr)
HardSpace() //To keep scientific number all on same line
TypeChar(CharacterSet:6;CharacterOffset:39)        //Times sign
HardSpace() //To keep scientific number all on same line
Type(Text:"10")
FontSuperscript(State:On!)
STRNUM(Exponent;ExpStr)  //Convert the string to a number
STRLEN(ExpLen;ExpStr)    //Get the length of the string
//Check if exponent is negative; if so, insert negative sign:
IF(Exponent<0)
     SUBSTR(ExpStr;2;ExpLen-1;ExpStr)              //Remove dash
     TypeChar(CharacterSet:4;CharacterOffset:33)  //Minus sign
ENDIF
Type(ExpStr)
FontSuperscript(State:Off!)
QUIT
```

Figure 5. A Macro listing.

using the macro requires only 12 keystrokes. Assigning it to the Button Bar would lower than number of keystrokes to 8.

To create a macro program, the user types and edits the necessary macro commands using a normal WordPerfect edit window. All the WordPerfect edite features (including search-and-replace, cut-and-paste, and other macros) are therefore available while editing macros. The macro file is saved like any other WordPerfect document, except it must have the filename extension .WCM. The first time the user runs the macro, WordPerfect compiles it and then executes it. After a macro is compiled, it subsequently executes very rapidly. The user can still edit the compiled macro by opening the macro file into a WordPerfect window, and, after making the desired changes, saving the edited version back to the disk. The macro will then recompile the next time it is executed.

WordPerfect for Windows supports named macros (that is, the macros have normal filenames which the user types or selects to execute the macros) and also supports Ctrl and Ctrl+Shift macros, which the user executes by pressing Ctrl plus a letter or digit or by pressing Ctrl+Shift plus a letter or digit.

WordPerfect for Windows macros are not compatible with DOS macros. WordPerfect supplies a conversion utility so users can convert their DOS macros to Windows macros, but conversions of complex macros usually fail. WordPerfect Corp. promises a better conversion utility in the next version of WordPerfect for Windows.

For instructions, tutorials, and references on macro programming, users should order the *Macro Manual* and the WordPerfect Macro Command Inserter, a book and disk combination available from WordPerfect Corp.

Other Features. WordPerfect for Windows supports a wide variety of other features that chemists will find useful, including equation editor, automatic cross references, tables, styles,

graphics, speller, thesaurus, columns, automatic index and table of contents, and multiple windows. Most of these features were covered in an early review.[1]

Chemists who have the necessary hardware to adequately support Windows applications will find WordPerfect for Windows a powerful, flexible, easy-to-learn, and easy-to-use word processor.

REFERENCES AND NOTES

(1) Zimmerman, S. S. WordPerfect for Chemists. *J. Chem. Inf. Comput. Sci.* **1990**, *30*, 200–201.

(2) *WordPerfect for Windows*, version 5.1, is available from WordPerfect Corp., 1555 N. Technology Way, Orem, UT 84057 [(800) 225–5000] ($495).

(3) Microsoft *Windows*, version 3.1, is available from Microsoft Corp., One Microsoft Way, Redmond, WA 98052-6399 [$149; upgrade from version 3.1, $79.95].

(4) Zimmerman, S. S. The Real World of Windows. *WordPerfect Mag.* **1992**, January, 32–33.

(5) To receive a free copy of three WordPerfect for Windows macro programs—SCI (to insert scientific numbers), NUC (to insert nuclear equations), and ALK (to insert chemical equations of straight-chain alkanes), along with a description of how to use the macros—send the author a self-addressed stamped disk mailer and a 5.25-in. or 3.5-in. *formatted* diskette.