DrawPerfect and CorelDraw

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Graphics files reacted by CorelDraw can be read by most commercial typesetters. Comparatively few typesetting shops are able to work with DrawPerfect graphics files, and this is the clue to the difference between these two programs. CorelDraw is designed for commercial artists and DrawPerfect for the technical artist.

DrawPerfect[1] is a graphics editor which is provided as a companion to the widely used text processor, WordPerfect. It offers all the generally required capabilities of a graphics editor and is very strong when dealing with rectilinear shapes, such as lines, squares and boxes. Management of curves is also supported by DrawPerfect, although here, it provides only the minimum capability necessary to support typical scientific diagramming. Lines, and motifs such as squares, rectangles, and polygons, which incorporate lines, can be drawn with 16 different thicknesses, ranging from hairline ($^1/_4$-point rule) to 8-point rule, and in 16 different styles, such as solid, dotted, dashed, and so on. The same is true of curves, circles, and ellipses. Two-dimensional objects such as squares and circles can be filled with 16 patterns ranging from empty, through hatched to filled. Any drawing or part of a drawing can be expanded or contracted, objects can be "selected" and placed behind or in front of other objects, and an adjustable screen grid, to which objects may or may not be "snapped", is available. These all comprise the minimum acceptable capabilities for any graphics processor, and at this level, DrawPerfect competes well with all the other commonly available programs. DrawPerfect handles color, offering the standard IBM color palette of 256 colors. Some examples of DrawPerfect output are provided in Figure 1.[2]

Figure 1.

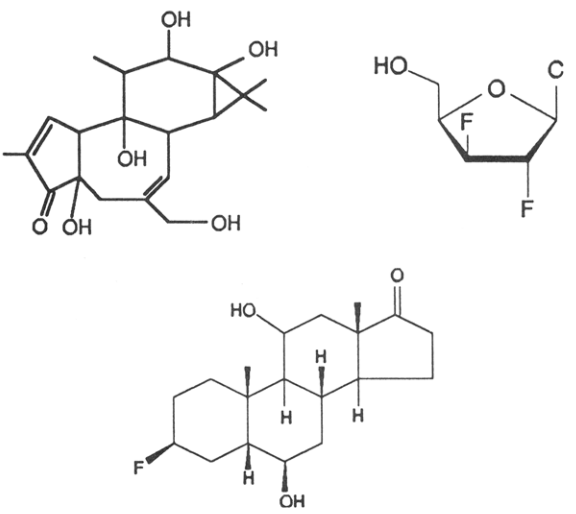

Figure 2.

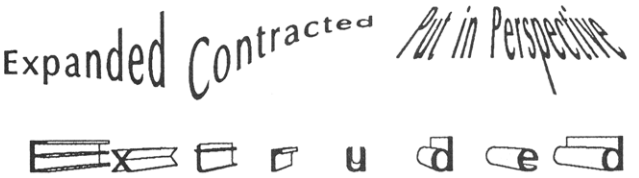

Figure 3.

When called upon to generate chemical structures, DrawPerfect is very useful. It falls short of the specialized programs such as ChemDraw and ChemWindow mainly in the area of prebuilt templates and idosyncratic symbols such as stereobonds. ChemWindow graphics, it should be noted, can be imported into DrawPerfect or WordPerfect. The specialized programs are probably more efficient in terms of time, but, as can be seen from the examples shown in Figure 2, DrawPerfect can however generate all that is needed for chemical structures[3] and frequent users can build their own template libraries.

When dealing with text and graphics, DrawPerfect possesses a mix of strengths and weaknesses. A major strength is its ability to merge a DrawPerfect graphic into a WordPerfect text. This clearly was a primary design goal, and it works very well. Under DOS, both WordPerfect and DrawPerfect can be run simultaneously from a shell program, and one can switch back and forth at will. This is currently not possible under Windows because a Windows version of DrawPerfect is not available. Use of graphics within text is routine. WordPerfect, under Windows or DOS, manages imported graphics well, and I have prepared manuscripts such as this review in this way for several years. Graphics can be imported into WordPerfect tables, although tables cannot be imported into graphics. Use of text within graphics, is a far less polished capability. Text can be imported from WordPerfect, and DrawPerfect allows generation of text, offering a choice of 30 scalable typestyles, but some necessary functions, such as right justification, are missing. DrawPerfect claims to be able to plot numeric data, but it falls very far short of a useful graphing program, and those who need to produce plots of numeric data should stick to packages like GraphPad or Mathematica.

CorelDraw[4] is a graphics package which, in its approach, is often quite different from DrawPerfect, although the goals of the two programs are the same. The most noticeable feature of CorelDraw is the absence of a text editor corresponding to WordPerfect which is run together with DrawPerfect. Instead, CorelDraw has a built-in text editor which in some ways is much more powerful than WordPerfect but in other ways is weaker. CorelDraw's text editor allows left, right, and full justification of text and control of the size and shape of characters as well as all spacing (intercharacter, interline, and so on). Further, the graphics editor in CorelDraw allows all sorts of later manipulation of text to produce figures such as those shown in Figure 3. Thus when generating a slug of text, which is to be incorporated into a brochure for example,

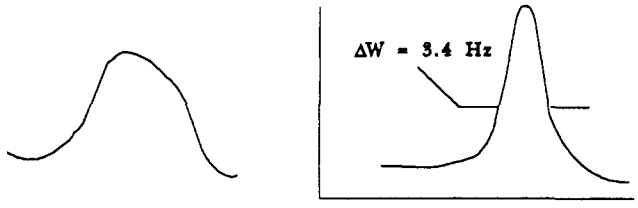

Figure 4.

CorelDraw performs far better than DrawPerfect. On the other hand, this is no place to generate a multipage text document; that is clearly WordPerfect territory.

The graphics capabilities of CorelDraw overlap considerably with those of DrawPerfect. CorelDraw can be used to generate the same sorts of scientific diagrams, but DrawPerfect is easier to use. A benzene ring can be drawn in either program, but the operation is faster in DrawPerfect. A problem was encountered in the grid-snap function in CorelDraw; the Corel help desk told me that, in contrast to the manual's assertion (p 249) that straight lines cannot be snapped to a grid (which greatly hampers the drawing of regular polygons), double clicking when drawing the lines does snap them to the grid. CorelDraw offers a great deal of control for the management of curves. Line drawing may be in Bézier or freehand modes, and when a curve has been created, it can be edited with significant precision. A curve created in CorelDraw has a number of nodes, each of which has handles. Nodes can be moved and the handles can be used to alter the slope of the curve. Thus a hypothetical peak can be drawn freehand (Figure 4, left) and edited to illustrate peak width at half-height (Figure 4, right).

CorelDraw's management of color is a major aspect of the system. It uses the PANTONE color matching system which is used by almost all commercial printshops and in addition supports user-defined process color (cyan, magenta, yellow, and black) to provide over 16 million different colors. This is far beyond the display capabilities of a PC or its printer and is provided as a link to the printing industry which can process CorelDraw files directly.

Reading or writing graphics files in a "foreign" format (i.e. a format not used by the graphic program itself) is generally termed "importing" or "exporting". DrawPerfect can export files in several formats such as Hewlett-Packard Graphics Language (.HPGL) and Computer Graphics Metafiles (.CGM), but it is not possible to import files into the program without first processing them through a converter program. CorelDraw is more versatile and can read 13 import formats and write in 17 export formats. I often use CorelDraw as a "translator", importing an .HPG file from a Workstation for example, and immediately exporting it as a .WPG (DrawPerfect) file which can be incorporated into a WordPerfect document. It is easier to do than to explain.

Both DrawPerfect and CorelDraw support all the common printers. With the configuration I use (Compaq 386/25 with an HP LaserJet II), DrawPerfect prints graphics faster than CorelDraw by a factor of between 1.5 and about 5. CorelDraw does much better on PostScript printers of course. All the figures in this Review were drawn with either DrawPerfect or CorelDraw[5]. Both programs provide a WYSIWYG display. The documentation provided for both programs is good, but could be better; both have quite lengthy user's manuals which either omit or conceal the vital detail which you need to know. CorelDraw comes with a very useful videotape which, for beginners, is far more helpful than the user's manual.

To summarize, both programs are genuinely useful. Neither is particularly difficult to use, but their strengths are different. Both can handle routine graphics. If your need is for scientific diagrams which can be imbedded into documents, then DrawPerfect is recommended. If, on the other hand, you are producing advertizing copy or informational brochures in which graphics and color are important, then you should try CorelDraw.

REFERENCES AND NOTES

(1) DrawPerfect, Version 1.1 is supplied by the WordPerfect Corporation, 1555 N. Technology Way, Orem, UT 84057. Telephone (801) 225-5000. The list price is $495.00. The program runs in the normal 640K memory on a 286, 386, or 486 IBM or compatible PC.
(2) Numerous examples of photo-offset DrawPerfect graphics are to be found in this journal; interested readers are referred to pages 439–441 in this issue, as well as: *J. Chem. Inf. Comput. Sci.* **1991**, *31*, 171, 363–374, 377–378, 483–489, 574–578.
(3) Photo-offset chemical structure diagrams generated by DrawPerfect are also common in this journal. See: *J. Chem. Inf. Comp. Sci.* **1991**, *31*, 89–96, 363–373.
(4) CorelDraw is supplied by Corel Systems, Toronto (Telephone: 1-800-836-DRAW; FAX 613-728-9176). The list price of the program is $365.00.
(5) Figures 1 and 2 were drawn in DrawPerfect and retrieved into the WordPerfect file of the document. Figures 3 and 4 were created in CorelDraw, exported as DrawPerfect (.WPG) files and incorporated into the WordPerfect file.