

## Comment



### WORD PROCESSING: A GUIDE FOR THE PERPLEXED

#### For and Against

Of the many appliances that ingenuity has devised to ease the labor of writing, the word-processing computer is by far the worst, except for all the others. The computer's electronic rhythms confound the rhythms of thought. Its electronic screen mesmerizes its user into a state of dazed vacancy. The computer strains visual acuity and personal relations. It tempts careful writers into garrulous style and deformed structure. Used carelessly, it can destroy a year's work as irreparably as fire or flood.

Nothing could induce me to work without one.

The claims made for the computer by its evangelists are, in the main, sufficiently true for me to endorse the bulk of them without comment. For much of the writing that readers of this magazine are likely to do, the computer serves as an unparalleled labor-saving device. For journalism, business letters, translations, reports, recommendations, notes on research, word processing speeds the work and relieves its frustrations. Anyone who has ever retyped a letter five times, until the angry outbursts of the first draft yield to the conciliatory murmurs of the last, will find that the effort of changing one's mind is much easier on the computer screen than it is on paper. Anyone who has ever cut-and-pasted revisions into an already blotched and disjointed typescript will discover the pleasure of taking a warm bath while the computer, all unattended, prints out reams of flawless pages.

The temptations offered by the computer are real, but they are most dangerous when the machine becomes an idol, or when it gratifies some intellectual version of gluttony or vanity or sloth. The more fluent a writer, the more dangerous is the machine. The computer makes small-scale revision so painless that large-scale rewriting begins to seem an outmoded waste of time. A writer who used to type out a paragraph again and again, always making changes in rhythm and proportion, always seeking the more just and exact word, can easily fall prey to the luxury of revising without rewriting. A finished paragraph can be made to appear on screen in a fraction of the time needed to create a paragraph with pen and ink. But the nearly effortless computerized paragraph all too often lacks the logic and authority of the paragraph produced by heavy labor at the typewriter or yellow pad. Writing tends to achieve authority when the author knows five times more than he says. With a computer it is all too easy for an author to put down everything he knows, and more. (The editor of a British literary weekly tells me his contributors' prose collapses immediately after the purchase of a computer, but that it recovers after about a year. A lot of bad prose can be written in a year.)

A computerized paragraph is deformed on a small scale. A computerized chapter or essay is all too often disproportioned monstrously. A writer who works on paper can easily sense when one section of his work is too long or too detailed in relation to the whole. It is a simple and intuitive act to compare the prose on one sheet of paper to the prose on another. But to compare the prose on the computer screen to the prose on a sheet of paper is surprisingly difficult. The mind cannot make an easy transition from one medium to another. The screen, furthermore, seizes attention, not only because it glows with its own light, but also because its image is subliminally unstable, and the eye seeks activity. Anything that appears on screen seems more important, more deserving of care, than anything abandoned to the inert immobility of paper and ink. For a scientist or mathematician who seldom needs to compare the image on the computer screen with a page of printed text, this presents no difficulty. But for a writer who wants to compare one draft to another, or for a historian or critic who must give the same close attention to printed books as to his own working drafts, the effect can be disastrous.

The three-hundred-word capacity of the standard computer screen will act as an intolerable constraint on anyone who writes extended narratives or complex arguments, but it does serve the purposes of some of the most characteristic writing of our time. Every age gets the technology that suits its frame of mind. The camera and the phonograph were invented to serve an age that valued exact realism in the arts. So the word processor was invented to serve an age that values an art of minimalism and transience. It scarcely matters whether the narcissistic disconnected vignettes that make up the fiction of Renata Adler or the self-absorbed fragmented reveries that make up the poetry of John Ashbery were in fact written at a computer; the computer is the proper medium for the age in which they were composed. The computer is probably *not* the proper medium on which to compose writing intended to affect or understand the world around it. Such writing may well continue to be drafted with typewriter or pencil and entered into a computer only for the later stages of revision. And for those late stages of the act of writing, the computer is an almost unequivocal blessing.

It is even more of a blessing to the writer who has never been fluent in any medium. For the blocked or the hesitant, the advent of the computer is like the advent of spring: the frozen river surges, the hard earth flowers. Writers who once labored hours to produce one cramped paragraph now pour forth luxuriant pages. Academics who once wrote English as if they were translating some minor German idealist now call spades spades. Their writing may not be done well, but they are surprised to find themselves doing it at all. The same effect can be dangerous in government and industry, where secretiveness is thought desirable. Executives



who reveal nothing to colleagues or committees reveal all to the receptive screens of their computers. But where free exchange of information is an imperative, the computer provides information to exchange. I know an academic philosopher who, when he worked with pen and paper, wrote little more than a page or two every year. He told his colleagues he wrote slowly because he wanted everything that appeared under his name to be unquestionably true. Last year his colleagues persuaded him to buy a computer. He has since sent off seven essays to philosophical journals. He offers no opinion as to their veracity.

### Hardware and Software

The written word takes on new habits when the computer is its subject, just as it does when the computer is its medium. To write effectively about computers requires both writer and reader to accept some minor dislocations in style. In the world of book and magazine publishing, for example, publishers' names are common nouns like Penguin or proper nouns like Oxford. In the world of computers, publishers' names tend to be arbitrary combinations of familiar or unfamiliar syllables, often with a capital in the middle, as in Quicksoft or XyQuest. In the world of print, careful prose tends to be written in the first or third person. In the computer world, prose is by necessity written in the second person, because to write about computers is to write about what you do at the keyboard and about what the computer tells you in response. I hope this paragraph may ease the shocks some readers may feel in the paragraphs that follow.

Until a few years ago, writers bought Kaypro computers or none at all. Today there is no reason to do likewise. Word-processing programs are no longer written for the Kaypro and related machines, and the programs still available are clumsy and limited by comparison with the many available for the IBM. (I shall have some advice later for writers who still use a Kaypro and like it.) Programs written for the Apple computer are capable of handling grade-school papers, business letters, and little else. The computer you should most diligently avoid, however, is the Apple Macintosh. The ads for this cute little machine emphasize that it is easy to use. True—and that is because it can do so little, and does it at quarter-speed. More than a year after its introduction, only two word-processing programs have been written for the Macintosh. One, Macwrite, is limited to documents nine pages long. The other, Microsoft Word, is adapted from a version written for the IBM that I will be railing against shortly. The Macintosh version has all the faults of the original, and adds many new and innovative defects of its own. "Dedicated" word processors—computers that do word processing and nothing else—are either too limited (like the Wang) or too expensive (like the CPT) for most writers to consider.

Programs written for one computer cannot be plugged into another; different versions of the program must be written for each machine. A computer communicates with a program through a characteristic "operating system" that might be thought of as the computer's native language. You tell a computer what to do by issuing laconic commands like "copy" or "sort," much as you tell a dog what to do by issuing commands like "fetch" or "stay." The Kaypro understands a primitive dialect of an operating system called CP/M. Apple computers have a language all their own. The IBM thinks in PC-DOS, a sophisticated dialect of a widespread language family called MS-DOS.

The only computer a writer should consider buying today is one that speaks a dialect of MS-DOS, preferably the IBM Personal Computer, or, as a second choice, one of the "IBM clones" like the Compaq. The IBM is by no means the best designed or the most advanced personal computer to be found. But it has become the industry's standard, and every word-processing program worth using is designed to work at its best in an IBM. The better IBM clones can use these programs also, but they behave oddly when they do. Words that appear underlined on screen when used with an IBM may appear in light gray, without the underline, on a clone. The worst disadvantage of both the IBM and its clones—and of almost every other personal computer—is the whirring internal fan that protects the machine from its own electronic heat. Apple computers, in contrast, cool themselves through cleverly arrayed ventilation slots, although future Apple models will reportedly need fans also. Silent cooling systems exist; there is no good reason why personal computers should not take advantage of them.

The most sensible purchase at the moment (mid-1985) is the basic IBM Personal Computer, with two disk drives (devices that read data from "floppy" magnetic disks and record data onto them, in the same way a tape deck uses cassette tapes), and equipped for use with a monochrome (green on black or amber on black) screen. If IBM has discontinued the original PC by the time this Comment appears, then buy the two-disk-drive version of the slightly more advanced model called the PC XT. It would be wise not even to consider any more recent IBM model until at least the middle of next year, when the inevitable defects of any new computer will presumably have been corrected.

For most purposes, the amount of electronic memory you will need to have installed in the machine can be IBM's standard 256,000 characters (256K). This, with the best word-processing programs, will allow you to edit a piece of work as long as a hundred pages without major delays. (In the computer world, any piece of written matter is called a "document"; I don't much care for the word, but I can't think of anything better.) You can easily add more memory later if you find you need it. Instead of one of

the floppy-disk drives, you may want a "hard disk," which can store the equivalent of a few dozen floppies. A hard disk remains fixed in the computer and can be a great convenience if you expect to work on many different projects at once—you won't have to keep shuffling floppy disks in and out of the machine. But a hard disk adds around a thousand dollars to the price, requires a noisier fan, and, if it ever fails, can take with it half a dozen book manuscripts. You can protect yourself from a hard-disk failure if you copy the contents of the hard disk onto floppies once a day; but you probably won't.

The keyboard supplied with the IBM is much reviled. The left-hand shift key is in the wrong place, and the return (or "Enter") key is too small. But you will only be wasting money if you buy one of the substitute keyboards touted by computer salesmen. For all its faults, the IBM keyboard demonstrably permits faster and more accurate typing than its rivals. On the other hand, the IBM monochrome screen is seldom reviled but deserves to be. When you try to delete words from an IBM screen, they remain visible for a few seconds as a distracting ghost image. IBM does not require you to buy its screen when you buy its computer. Get one of the better and less expensive monochrome screens made by Amdek, Quadram, Princeton, or Taxan. Price is as good a reason as any for preferring one manufacturer to another. Whether you choose an amber or a green screen is entirely a matter of taste. European research favors amber as more restful. American research is inconclusive.

Printers for personal computers range in price from a few hundred to a few thousand dollars. A clear recommendation anywhere within that range is impossible. Many publishers now refuse to work with the fuzzy computerized text produced by "dot-matrix" printers. Such machines can work at tremendous speed, but a "letter-quality," or typewriter-like, printer makes for better relations between author and editor. Before buying a printer, decide whether you can live with the noise it makes and study a sample of its output. Some machines use an acute accent in place of an apostrophe, which makes single quotation marks look odd. Among the better letter-quality printers, those sold by Amdek and (by special order) Fujitsu can print the special characters of most western languages as well as all the characters on an American keyboard—so façades look the way they should and Hölderlin reads correctly. NEC printers will do the same when used with a special fifteen-dollar multilingual print element (the equivalent of the golf ball on an IBM Selectric). Diablo, Qume, and most other printers allow the use of foreign characters, but they either substitute quotation marks for umlauts and commas for cedillas or require you to use print elements that lack some standard American characters. Except for the new three-thousand-dollar laser printers—which are essentially xerox machines that construct an image of



a page according to instructions sent by a computer rather than reproduce an existing image—all printers sound more or less like an earthquake in hell. Amdek and Fujitsu printers make less of a racket than their rivals do, and NEC claims to be working on the problem. IBM has a new printer called the Quietwriter. It isn't.

A printer that makes noise like a mad elephant and moves at the speed of a sane one can at least be left to do its loud sluggish work while you amuse yourself elsewhere. A bad word-processing program is a disaster that constantly afflicts you when you try to write. The choice of a program is the most important choice a writer makes when setting up a computer system, and most writers make the choice with little to advise them except word of mouth.

Word of mouth is always fervent in its preferences and usually wrong. If you ask someone who is satisfied with his computer, he will recommend whatever program he happens to be using and will insist that you have no need for all the conveniences it lacks. If you ask someone who is dissatisfied with his program (the proper response to most of them), he will recommend a program that is in fact even worse but is rumored to be the darling of the experts. If you ask the salesman in a computer store, he will explain that there are only two programs worth considering: the one with the biggest markup, and the one whose publisher pays a bonus to every salesman who unloads twenty-five copies by the end of the month. If you ask someone who knows all about large "mainframe" computers, he will tell you not to get a word-processing program at all, but to imitate mainframe procedures and get one program for editing your text and another for giving it a format to be used by a printer. (In the same way, a railwayman, convinced that the locomotive should be separate from the baggage cars, might urge you to drive a tractor-trailer rather than a BMW.) If, like many naive academic department chairmen, you hire an expensive consultant, he will take careful notes on your needs, disappear for two weeks to cogitate over the unique circumstances of your problem, and then recommend exactly the same ham-fisted program he recommends to everyone else. If you pursue your own research in the computer magazines, you will learn that nothing ever goes wrong with a computer program, and that every program is wonderful in its own way, especially those whose publishers have large advertising budgets. If you come across one of the infrequent reviews that compares one program to another, you may find the basis of comparison somewhat puzzling. When *PC Magazine* published an omnibus review of nineteen programs, it compared their ability to correct, format, and print a slightly defective text of the Gettysburg Address. The results were invaluable to everyone who never writes anything longer than two hundred words. (An exception to the dismal norm of word-

processing reviewers is the ever-reliable Charles Spezzano in the *Whole Earth Review*.)

Some two or three hundred word-processing programs have been written for the IBM personal computer, and a few hundred more for other families of machines. Most writers will have little use for all but a very few. Some programs are designed primarily for writing business letters of a page or two, or for technical and scientific reports. Some require you to perform complicated arabesques before you can insert a word into the middle of a sentence. Some are unable to hold more than a few thousand words in a "file" of data; with these programs, if you want to move back and forth between the beginning and end of a long chapter, you must go to almost as much trouble as you would if you kept the end of the chapter on your desk and the beginning in the house next door. Some programs are not software but "vaporware"—programs ceremoniously announced by their publishers, advertised by dealers at bargain prices, volubly recommended in computer magazines, but entirely unavailable because they are as yet half-finished and may never be finished at all.

Some programs do not require you to type out commands when you want to tell the computer what to do, but instead offer "menus" of pre-determined courses of action from which you select the one you prefer. When presented with a choice between two programs, one "command-driven," the other "menu-driven," novices tend to choose the menu-driven because it promises to take them by the hand through unfamiliar territory. In fact, a menu-driven program is the worst possible kind for a writer to buy. It not only takes you by the hand through alien landscapes, it takes you by the hand every time you want to cross the street. Instead of allowing simple operations to become habitual and automatic, it repeatedly demands that you stop thinking about what you are writing and start making choices among lists of mostly irrelevant alternatives before you can do anything at all. If you still think you prefer a menu-driven program's safety (often illusory) to a command-driven program's freedom (often safeguarded), consider what it would be like to use a menu-driven kitchen. Before you could reheat a pot of coffee you left on the stove after breakfast, you would have to make a selection from the Main Kitchen Menu, which would look like this:

DO YOU WANT TO:

1. PREPARE FOOD? (PRESS P)
2. COOK FOOD? (PRESS C)
3. WASH DISHES AND EXIT? (PRESS W)
4. GO TO A DIFFERENT ROOM INSTEAD? (PRESS THE ESCAPE KEY)

After pressing C you would then wait a few moments until the Cooking Menu appeared:

DO YOU WANT TO COOK WITH:

1. THE OVEN? (PRESS O—LETTER NOT NUMBER)
2. THE RANGE? (PRESS R)
3. THE TOASTER? (PRESS T)
4. AN UNDEFINED AUXILIARY UTENSIL? (PRESS U)

After pressing R, you would again wait a few moments for the Range Menu to appear:

RANGE CURRENTLY SET FOR: RR (RIGHT REAR BURNER)  
TO RESET, PRESS LR, LF, OR RF

With a command-driven kitchen, on the other hand, you would walk to the stove and turn on the burner.

Menu-driven programs do have their uses, however. Corporations need to have them so that temporary secretaries will be able to turn out routine letters even when they have no previous experience with the program. Writers who hire temporary help to fill in dialogue for their minor characters or to insert plot summaries in low-paying book reviews will no doubt find such programs equally invaluable.

### The Many

Journalists, essayists, and scholars, novelists, dramatists, and poets have few suitable word-processing programs to choose from. The three best programs are not at all the best known: they are WordPerfect, XyWrite, and Nota Bene. They may be considered the two best, as Nota Bene is a refined and expanded version of XyWrite prepared under license by a different publisher and directed toward a mostly academic audience. Another worthy program, PC-Write, is less capable than these, but may be had for as little as one-fiftieth of the price, or less. (I list prices and publishers at the end.) For some special purposes, Microsoft Word may be the program of choice. But although it has virtues painfully lacking in other programs, for most purposes it seems fundamentally misconceived.

All these programs have serious flaws, and each offers its own special varieties of annoyance and illogic. But the three best programs are each far superior to anything else available. Each is designed less for the sake of dazzling salesmanship and more for easy and efficient use. Each is rapidly outgrowing its faults. By the time this appears in print, new versions of XyWrite and Nota Bene should be available, and new versions of WordPerfect and PC-Write will follow soon after. Much that I complain about in these pages may be corrected by the end of the year, but this is no reason to delay a purchase. Software publishers replace older versions of



their programs for fees ranging from fifty dollars down to nothing, depending on the extent of the changes and the time that has passed since you first bought the program.

WordPerfect, XyWrite, Nota Bene, and the inexpensive PC-Write occupy a small circle of light in the world of word-processing. Outside, all is darkness and confusion. The darkness is well populated. All the best-selling programs are to be found there, including the most famous, WordStar. But the million-and-a-quarter copies sold of WordStar constitute no more of a recommendation for that chaotic and incapable program than forty billion hamburgers constitute a recommendation for McDonald's. WordStar is command-driven, and has given command-driven designs a bad name. The program's victims are doomed to spend months memorizing wildly illogical commands like Control-OG,\* which, in an insane demonstration of the arbitrariness of language, means "indent this paragraph." WordStar sufferers insist they really prefer this sort of thing and become convinced that all programs work in the same ridiculous way. Their delusion can grow intense enough to warp their intelligence. I know an otherwise rational WordStar user who still cannot comprehend that a well-designed program like WordPerfect has no commands to memorize at all. (WordPerfect's commands are assigned to the IBM's "function keys" and are labeled on a plastic template that fits around them.) He finds it equally difficult to take in the fact that programs like XyWrite and Nota Bene use mnemonic commands like LM for "left margin" or SE for "search." He will never shed his WordStar chains (although he could do this effortlessly with WordPerfect, which automatically converts WordStar files into a form suitable for its own use), because he will never shed his conviction that any change would merely replace one arbitrary set of chains with another. (The publishers of WordStar have introduced a new program, WordStar 2000, which they claim is easier to use. On balance, it offers no improvement over the original.)

Other victims of WordStar, less dedicated to martyrdom, have given up the program for menu-driven alternatives like MultiMate and Samna Word. When describing the change, they sound like the chorus of freed prisoners in *Fidelio*. They fail to recognize that they have done no more

\*"Control-X" (or "Control-whatever") is the conventional notation that indicates "hold down the Control key and type X." On the IBM and most other computer keyboards there are Control and Alternate keys that work somewhat in the manner of the Shift key. As Shift-A produces an uppercase A, so, depending on the program and the user, Control-A or Alternate-A could produce an accented a, or it could Align a column of figures, or Advance to the next line, or perform any other function. The IBM keyboard also includes ten numbered "function keys" that can be used to invoke similar operations, a set of arrow keys that move the cursor (the normally flashing block on screen that indicates where the next typed character will appear), and some miscellaneous keys.

than shift from a stone cell to a padded one. MultiMate and Samna Word are designed for office correspondence and assume that the only alterations you will make after typing out a page will be small revisions rather than wholesale cutting, adding, and rewriting. Woe to you if, after completing a page with MultiMate, you decide to add a couple of sentences. You must invoke a special delete-and-insert command, which makes half your text disappear; if you make a mistake, everything that follows will be disfigured. And woe to you if, after making corrections in a paragraph typed with Samna Word, you decide to add a sentence to the end of that paragraph. Samna insists on jumping the cursor to the start of the following paragraph, and you have to maneuver it back to where it should have been in the first place. Both these programs are excruciatingly slow to do their work. If you want to move from the beginning to the end of a chapter, you have to move through every page in order while staring steadily at the screen, your mind a passive blank. MultiMate, despite its menus, manages to baffle intelligent beginners. Samna Word, which seems designed to be sold rather than used, includes some of the few available word-processing features that are almost entirely worthless—for example, a “zoom” command that provides a reduced diagrammatic image of the page you are working on. Before you can use this doubtful benefit at all, you have to spend money on internal gadgets for your computer and then be prepared to wait patiently while the computer generates that nice little image.

### The Few

Compared to these quagmires, a well-designed program gives solid ground and sure footing. WordPerfect, XyWrite, and Nota Bene are all quick and capable. Each lets you write and edit without fuss or contortions. Each provides an array of conveniences that you may use if you want them or ignore if you don't. Each program can do such things as compile an index to a book or perform mathematical calculations, but if you don't want it to do either, the program never tugs at your sleeve to remind you that it can. Each offers automatic placement and numbering of footnotes or endnotes so that you can move a footnote simply by moving its number or insert a new note and let the program renumber and rearrange the rest. Each performs all the standard tasks now expected of word-processing programs. Each, for example, can automatically replace any word or formatting instruction with something else, so that you can type, say, “myx” every time you want to write “myxomatosis” and let the computer make the substitution later. (This is invaluable for scientific writing but elsewhere tends to destroy prose rhythms.)



All three programs permit you to store complex sequences of text and of formatting commands in such a way that they can be invoked by pressing a single key. You could use one key, for example, to tell the computer to insert the conventional closing for a letter, lay out the address for the envelope, and print out the letter and envelope together. And all three permit you to keep, in addition to a standard set of key-assignments, other sets that can temporarily override it. For example, a theater manager who also writes plays could make Alternate-C normally print out the letterhead for his Company, but when working on a play he could make it type out a centered and capitalized speech heading for Cordelia or Coriolanus.

I find it impossible to offer a decisive recommendation of any one of these three programs, but I hope the descriptions that follow may help others choose for themselves. Each program has a mood and character of its own that some users find intolerable, others congenial. Each has merits that I find indispensable, but each has a slightly different set of them. The ideal word-processing program would combine the best features of all three, together with one or two features each from PC-Write and Microsoft Word. Within a year or so, each may have most of the features of the others (although Nota Bene has a special indexing-and-retrieval function unlikely to appear in the other two for quite some time). But those features will operate in different ways according to the different character of each program. If you choose any one of these three programs, you would be wise to resist the temptation to switch to any of the others. If you know only one word-processing program, you will enjoy the happy belief that God uses it to write memos to the angels. If you know two programs, you will dislike them both, because each highlights the faults of the other. (This does not apply if one of the two is WordStar. The second program, in this case, seems the program of heaven, WordStar the program of hell.)

WordPerfect (not to be confused with Perfect Writer) stands out as the most realistic and transparent of all word-processing programs. It makes the computer screen look as much as possible like a page of typescript. Unlike virtually all other programs, WordPerfect does not distract the eye with paragraph symbols, tab-stop rulers, lists of available commands, names of files, miscellaneous lines and frames, or (as in Microsoft Word) the name of the program itself. At the lower right-hand corner of the screen is an unobtrusive indication of the page and line number and of the position within the line where you are working at the moment. When the program has a message to offer it uses the lower left-hand corner of the screen, or temporarily preempts another line or two, and then discreetly withdraws. Double-spaced typing appears double-spaced on screen—a great relief to the eye, and, at this writing, not yet available in XyWrite,

Nota Bene, or PC-Write. Page breaks appear as a line of dashes across the screen. For the ordinary, and many of the less ordinary, tasks of writing, no program is more agreeable and less intrusive than WordPerfect.

Unlike XyWrite and some other programs that at odd moments can seem designed more for programmers than for writers, WordPerfect communicates with the user in ordinary English. All the commands you need most often can be invoked by pressing a single clearly labeled key. To start underlining, you press the Underline key just to the left of the shift key. To stop underlining, you press it again. (In XyWrite and Nota Bene, unless you are confident enough to modify the keyboard assignments to a more sensible system, you have to press the Control key and then a number to start underlining, and the Control key and another number to stop.) WordPerfect uses menus only for functions you seldom need, such as establishing a repeating page heading or changing from pica to elite type. Any operations you perform frequently that require you to type a few keys in succession, such as starting a footnote, can be reduced to a simple mnemonic choice like Alternate-F.

With WordPerfect, the program and your printer communicate like old friends from the day you start working. With most other programs, the job of persuading the computer and printer to talk with each other feels like translating between Finnish and Turkish when you only know English. (Nota Bene is nearly as effective as WordPerfect in this regard, XyWrite and PC-Write somewhat less so.) The program also displays foreign and technical characters on screen with a minimum of effort on your part and assigns each character to a key of your choice.

WordPerfect is designed to protect its users from disaster, although at the price of a slight loss of flexibility. For example, you can tell the program to display the codes it uses to keep track of such details as altered margins or words marked for indexing, but you can only delete and then replace these codes, you cannot edit or rewrite them directly as you can with XyWrite and Nota Bene. This makes WordPerfect a bit slower at accomplishing complex tasks, but less susceptible to the invisible monkey wrenches you can easily throw into the works of the other programs. WordPerfect also protects you by making automatic backup copies of your work if you want them, and at any interval you choose. This can feel like a lifesaver. A WordPerfect program disk once went berserk on me—it happens with every program sooner or later—but the automatic backup kept my work intact, without even the loss of a syllable.

WordPerfect can correct typos and spelling errors by comparing every word in a piece of work against a wordlist with 85,000 entries. This catches mistakes the eye easily overlooks (the program also alerts you to words inadvertently typed twice), but it tends to foster the delusion that you no



longer need to proofread for substance and style. Microsoft Word includes a similar but less effective spell-check feature; PC-Write promises to include one of its own later this year. XyWrite and Nota Bene lack this feature but can be used with separate wordlist programs like Word Proof or The Word Plus.

Uniquely among word-processing programs, WordPerfect is effortless enough for a complete beginner to use with confidence and flexible enough for experienced users to adapt to their own needs. If you are especially adept with a computer, or expect to become so, you will find XyWrite and Nota Bene more adaptable. But even those two programs cannot perform some of the most useful functions of WordPerfect. Only with WordPerfect can you include in the same document asterisked discursive footnotes at the bottom of each page and numbered reference notes at the end of a chapter. With a little ingenuity, you can even make the reference notes print out in the proper order without disfiguring the body of the text with flyspeck note numbers. WordPerfect can also lay out text in two or more columns, a feature useful to scriptwriters; XyWrite and Nota Bene will do the same in the near future.

But WordPerfect also has annoyances and limitations. Some of them are bad enough to make me switch over to XyWrite and Nota Bene—whose different annoyances and limits then make me switch back to WordPerfect, and so on in an unending circle of frustration. WordPerfect starts to become annoying when you make extensive revisions in your work, especially when you make complicated deletions and changes in a single sentence. If you take out a few words from the start of a sentence, the program does not immediately shift back the remaining words into the resulting gap, as XyWrite and Nota Bene do. Instead, it “reformats” the text only when you move the cursor downward to make changes in the lines below. As you have to move the cursor anyway, this may sound innocuous. But if, after deleting a few words from the start of a sentence, you move the cursor down one line in order to revise a few words near the end of the sentence, you will find that the words have now jumped back up to fill the gap in the line where you started. You can get around this problem by pressing the “Rewrite Screen” key (which doesn’t work in every instance), or by moving the cursor word by word to the right rather than taking a shortcut down, but you *shouldn’t have to get around this at all*. The program acts the way it does because instant reformatting slows down demon typists, but I am told that the authors of the program may consider adding instant reformatting as an option. (I am also told that another potential annoyance will be eliminated before this review appears. In the version of the program available now, if you use the margins suitable for elite type, the line you are typing on screen will sometimes

jump a few spaces back and forth when you reach the end of a line. This is distracting enough to cause typing errors, and if you have been bothered by this problem, call the publishers and demand that they fix it.)

A further annoyance of WordPerfect is its slow-footedness in moving the cursor forward from, say, page two to page twenty-two. This can take as long as forty seconds—although moving backward the same distance takes only one-tenth the time. By comparison with programs that force you to scroll through each intervening page, WordPerfect seems positively speedy, but XyWrite and Nota Bene make similar moves almost instantaneously—which encourages you to make improvements anywhere you want, whenever you like. WordPerfect is also slower and more awkward than it needs to be in marking blocks of text that you want to move or copy, although improvements are promised in the future.

Two other annoyances of the program can be fixed by the user in less than a minute. As supplied, the program is set up to provide a justified right margin, which businesses prefer for appearance's sake, but which makes typescript difficult to read. The program is also set up to allow hyphenation, which means that every time you type a long word at the end of a line, the program beeps at you and asks you to decide where (if at all) you want a hyphen to be placed in the word. Both these features can be switched off permanently at any time.

WordPerfect's manual is lucid, accurate, and far more complete than most. (Novices are amazed by a software manual that has errors and omissions; old hands are amazed by one that doesn't.) The manual begins with a series of lessons that should permit a beginner to use the program competently in less than an hour. The program includes excellent "help screens" that you can summon up while working. These are so clear and precise that you may never need to consult the manual after your first few days with the program. And the program itself is so logical and elegant in its organization that you may never need the help screens again after your first few weeks.

XyWrite (properly XyWrite II-Plus—not to be confused with ZyIndex, a text-indexing program—published by XyQuest, not to be confused with SyQuest, a disk manufacturer) and Nota Bene may to some extent be considered together, as the latter program is built around a modified version of the former. Both stand out as the fastest and most efficient word-processing programs and by far the most adaptable to the special needs of any user. In XyWrite and Nota Bene, a sentence or paragraph can be moved or deleted in a trice; and it can also be restored if you delete it by mistake. Unlike almost all other programs, which stop to consult the disk every now and then before performing some essential operation, XyWrite operates entirely in the computer's electronic memory, so it can respond instantly to almost every command you might want to make.



(Nota Bene is somewhat slower when it does things XyWrite can't.) XyWrite's authors used to work for a company that made large computers for newspapers, and their program acts as if your deadline were five minutes away. In its present version, XyWrite is too impatient to trouble itself with the fancier aspects of page layout; the frills are available if you want them, but they aren't especially easy to use. (The forthcoming XyWrite III should be more agreeable.) Nota Bene, which is mainly designed for academic use, makes the frills easy to come by.

XyWrite offers a packed toolkit of editing functions directly available from the keyboard, and Nota Bene offers a great deal more. In both programs, lesser-used functions, generally for page format and similar matters, are available by typing instructions onto a "command line" at the top of the screen. You move the cursor to the command line by pressing a function key, then type in a mnemonic code. By the time the cursor gets back into the text, the program has carried out the command. Any change in format, or any "marker" placed in the text for indexing or other purposes, is indicated on screen by a bright solid triangle. You can read the significance of any of these triangles by placing the cursor on it and reading the codes from a "prompt line" at the top of the screen. The highlighted triangles of XyWrite and Nota Bene are more distracting than the hidden codes of WordPerfect, but easier to locate and modify.

True to its speedy character, XyWrite—and with it Nota Bene—is quicker to evolve and expand than most other programs. (Only PC-Write has a comparable growth rate.) Every few months, XyWrite's authors come up with some new trick to make the program go even faster than it did before. Last year, XyWrite's search-and-replace function seemed to work twice as fast as every other program's. Now the program includes an option that makes it five times as fast. As XyWrite has grown, it has become a pleasure-ground for tinkerers. As with WordPerfect, you can invoke complex sequences of text and commands from a single key; but in XyWrite and Nota Bene you can also invoke whole programs from a single key, and you can assign any of the standard word-processing functions to any key you like. There are even functions that the program does not perform when you take it out of the box but which you can easily incorporate if you choose. All these functions can be combined *ad lib*, so that if, for some arcane reason, you wanted to be able to press the shift key and have the program capitalize everything between the cursor and the next fourteen-letter word, boldface the six words following, and tell you the average length of the words remaining, your wish can be granted. Anyone who uses the program for a few weeks will have no difficulty devising less improbable examples.

One of the drawbacks of XyWrite is its initial keyboard layout, which is sufficiently arbitrary and illogical to make you want to rearrange it more

sensibly. Not many users will have the patience to make any changes at all, and few will want to spend six months redesigning the keyboard from scratch, but this is exactly what the authors of Nota Bene have accomplished. With XyWrite, it is always difficult to remember just which combination of keys deletes a sentence or "defines" a line that is to be moved or copied. With Nota Bene, these functions and many others—far more than in XyWrite—are arrayed in a logical and rememberable way. Nota Bene is the only program I know that exploits the physical layout of the IBM's Control, Shift, and Alternate keys to make the program easier to use. The program uses the uppermost of these keys to govern operations involving individual words, the middle one to govern sentences, the lower one to govern paragraphs. Why no one else ever thought of this blindingly logical arrangement is one of the mysteries of computing.

Nota Bene simplifies XyWrite in other ways as well. Where XyWrite speaks computerese (you tell it to "type" when you mean "print"), Nota Bene speaks English. It includes menus that beginners can use until they feel self-confident enough to command. Despite its complex capabilities, it makes the initial setup of the program almost effortless, and, in the version that will appear before you read this, even sets the proper margins when you choose pica or elite type. It incorporates automatic "stylesheets" for page layouts corresponding to the guidelines offered in *The Chicago Manual of Style*, the *MLA Handbook*, and other style manuals. You can tell the program to reformat an essay from one style to another at any time—although the program cannot, alas, set or alter the style of reference used within a footnote. That is, it can't change Chicago's commas into the Modern Language Association's colons, or the MLA's arabic numerals into the American Psychological Association's italic ones (although there are separate bibliography programs that can). You could devise similar stylesheets using the current version of XyWrite if you were willing to spend a few hours deciphering the manual and wasting a stack of paper through trial and error. (The forthcoming version of XyWrite will include stylesheets of its own.) And while XyWrite makes it possible, after some tricky initial effort, to display foreign and technical characters on screen, the program's heart isn't in it. Nota Bene has a full multilingual keyboard already installed and can be directed to imitate the standard typewriter keyboards used in Britain, France, Germany, Italy, and Spain. In academic circles, Nota Bene will be cause for celebration.

Where both XyWrite and Nota Bene are annoying is precisely where WordPerfect is not. Both programs clutter up the screen with details that make programmers happy but leave writers distracted. The top three lines of the screen are wasted on information that WordPerfect displays on one line, and displays only when you need it. The three lines include

space for writing in commands, space for "prompts" from the program (in the XyWrite version brightly labeled "PRMPT"), and a distracting tab-ruler on which a ghostly shadow-cursor apes the movement of the real cursor in the text below. With XyWrite, this last line can be made less irritating, and in Nota Bene the garish neon effect is toned down a bit, but in each case it's not enough. Both programs pepper the text with little backward-pointing arrows to indicate carriage returns. XyWrite's manual tells how to remove these flyspecks, provided you are a computer adept; Nota Bene's does not. Both programs expect you to remember that Control-3 (or is it Control-2?) begins underlining, and that Control-Zero (or is it Control-1?) returns the text to normal. Once you feel sure of yourself, you can change the keyboard so the Control-U starts underlining and Control-N gets things back to normal, but beginners will have to put up with the initial settings. Neither program, as of now, can print notes or quotations or anything else in one-and-a-half spacing, and both, as of now, require you to read everything on screen in cramped single-space. XyWrite forces you to fiddle with switches on your printer if you want to use elite type rather than pica; Nota Bene takes care of such details by itself. While deliberately looking for trouble, for the purposes of this review, I found ways to "lock up" both programs in such a way that everything I might have written since the last time I stored my work on a disk would have been lost. The programmers fixed the problem almost as quickly as the gas company fixes a leak, and the changes will appear in all future copies, but you should still be careful to save your work every ten or fifteen minutes. You should save work frequently with *any* word-processing program, but you would be safer still if XyWrite and Nota Bene provided the regular automatic backups you can get with WordPerfect.

XyWrite provides two tutorial booklets that offer a smooth entry into the basics of the program. After that, you sink into the morass of the full-scale manual. The manual's style shifts rapidly from friendly chat to impenetrable computerese and back again. When you figure out what some of the entries mean, you may discover that the program has evolved to the point where the entries are no longer accurate. If you want to make a semipermanent change in the margins and tab settings, don't follow the instructions in the manual. Follow the instructions you can get over the phone from the friendly folks at XyWrite. A completely new manual is promised for the next version of the program.

Nota Bene's manual stands among the very best. It gives pointers on details that you take for granted after ten minutes with a computer, but that almost always fox a beginner. And it describes the most complex features of the program clearly. The incomplete early version that I saw



ran to 530 pages, and you'd better read most of them twice. For all the logic of Nota Bene's keyboard layout, you will never be able to remember the function of all the possible combinations of keys, and to use the program without the manual handy would be reckless folly. The early version of the program that I reviewed did not include keyboard diagrams among its help screens, but an entirely overhauled system of on-screen information should be available when you read this. Nota Bene also promises a tutorial booklet, which in the draft I saw was detailed but schoolmarmish. The tutorial guides you through the steps needed to write and print a letter of recommendation, and, with infinite tact, gives the imaginary author of the letter the rank of associate professor—a position both tenured and non-tenured users can identify with.

XyWrite and Nota Bene can both be used to compile the draft of an index for a printed book; of the two, Nota Bene accomplishes this much more easily, and it also compiles bibliographies. (WordPerfect can index a book easily when used with a hard disk, rather less easily when used with floppies.) In addition, Nota Bene can produce a computerized index of every significant word, or of preselected key words, in any group of notes or documents that you have on disk. The enormous index that results is stored in the computer, not on paper. You consult it by asking the computer to look up a word or combination of words, and the computer then displays every paragraph that fulfills your request. You can then, if you like, copy part of a recovered paragraph into whatever you happen to be writing. Nota Bene is the first word processor to include this "textbase" feature. It does so by incorporating a heavily modified version of one of the separate programs that are available for the same purpose. (The program used in Nota Bene is sold separately as FYI 3000; comparable programs include Datafax, 411, Superfile, and ZyIndex. At the moment, the technology of the Nota Bene version is still fairly primitive. The program needs a few hours of solitude to index any clutch of documents big enough to be worth indexing at all, and the documents have to be in a special format before the program can work with them. If you did not originally type them in that format, you have to alter them with some simple but time-consuming commands. Law offices use programs like this to search for precedents in computerized files of judicial decisions—files that law offices can buy on disk. A scholar could use Nota Bene's textbase to find which of a thousand learned articles makes reference to Linear B—provided the scholar has typed detailed notes on all those articles into the computer beforehand. I can't imagine doing anything of the kind myself, but there are many writers who now store their notes and jottings on disks rather than on three-by-fives, and they will find this feature of the program uniquely valuable.

For all the riches of Nota Bene, I can still imagine hesitating over a choice between Nota Bene and XyWrite, or between Nota Bene and WordPerfect. If you hit a wrong key in either of those simpler programs, nothing much will happen. If you hit a wrong key in Nota Bene, you may find yourself watching a computerized light show, as the screen whizzes through a series of operations that you never wanted the program to do at all. You will probably get the screen back to normal without any difficulty, but you may use the program more gingerly afterward. If you leave the computer for the weekend, you may spend a lot of time on Monday flipping through the keyboard charts in the manual, trying to figure out which key turns on the page-and-line indicator and which turns it off, or which key restores a deleted block of text and which consigns it to oblivion. All this is the price of Nota Bene's polycompetence. Although there are other programs that can do a number of things Nota Bene can't, no other single program can do as much. Whether most equals best is a question to which a journalist and a scholar might give different answers. There is no *best* word-processing program, but there are three excellent ones, which is more than anyone could have expected only a few years ago.

None of these programs, I am sorry to report, does anything to alleviate a major headache of the IBM and most other computers. Unless stopped by the intervention of a programmer, the cursor displayed on screen by these computers blinks on and off continuously. As everyone knows from the *film noir* scenes where a neon sign flashes on and off outside the hero's seedy office, a blinking light induces tension. If you type quickly when writing at a computer and never pause to look back over your work, you may not even notice the blinking cursor in the midst of all the other activity on screen. But if you ever sit back to think about what you have written, you will find that blinking light a jaw-tightening distraction. WordPerfect's cursor is at least small and relatively unobtrusive, but with XyWrite and Nota Bene you are battered by the blinking of a big bold block. The blinking in all these programs was almost enough to make me prefer Microsoft Word, whose cursor (in one version of the program) has a steady gaze. But everything else about Microsoft Word is so annoying that the cursor finally made little difference.

If enough users complain loudly about the cursor problem, the publishers will listen. (While I was writing this, I heard from the authors of XyWrite that they would consider offering a solid-state cursor as an option in the future. Watch this space.) Meanwhile, there is a program called NoBlink that converts the IBM's cursor to a solid block and drastically reduces the discomforts of word processing. The program works smoothly with WordPerfect, erratically with XyWrite and Nota Bene (where the NoBlink cursor sometimes disappears), and it presents annoyances of its

own when you first transfer it to your word-processing disk. But it offers hope of something better, and I can say with confidence that I have seen the future, and it doesn't blink.

### Some Others

When word-processing programs cost up to five hundred dollars, a program you can get for nothing has an attraction all its own. PC-Write, even at a much stiffer price, would still be attractive. It has already matured to the point where it is comparable to the finest programs. In a year or two, it may well be one of them.

You can get a copy of the PC-Write disk directly from the publisher for ten dollars. But the publisher is equally happy if you get a copy from someone who already has one and gives you a duplicate. Most other publishers, if you give away a duplicate copy of their programs, threaten to garnishee your children. PC-Write, which calls itself "shareware," *wants* to see the program circulated this way. As the program disk contains the text of the manual, which you can print out on your printer, the free disk is more than enough to work with. But if you find you like the program, the publisher encourages you to pay \$75 to become a registered user, which means you get a printed and bound copy of the manual, a reference card to help with the keyboard, telephone access to answers to questions about the program, and copies of the next two versions. If, after you register with the publisher, someone to whom you gave a copy does the same, you get a \$25 commission. If four of your friends register, you start making a profit on the deal.

PC-Write is quick and clean, but limited by a variety of minor inconveniences. Its strong points are similar to XyWrite's. Because it does all its work in the computer's memory, the program never grinds to a halt to read information from the disk. It lets you move instantaneously from one point in the text to any other. It includes a unique "bookmark" indicator that lets you quit revising for the night and return in the morning to the point where you left off. (Nota Bene also has a bookmark, but if you delete it after you find your place, you can find yourself back at the beginning of the file.) It provides an instantaneous word count. (Word-Perfect's is slow, Nota Bene's only approximate; XyWrite doesn't have one at all.) It takes up only one line of the screen for its messages. It can store complex operations on a single key, and the keyboard can be modified at will. These are significant merits at any price.

On the other hand, PC-Write will not reshape a paragraph after deletions and insertions until you press a Rewrite key. It displays text on screen only in single-space. Its footnoting is primitive. The keyboard is densely and confusingly packed with functions. When you want to print



anything, you have to close down the editing program and start up a separate printing program. Beginners will find the program difficult, and the manual reveals its secrets only to those who already know something about word processing. In my first few days with the program, I found two or three bugs and unpredictabilities, none of them serious.

Yet PC-Write is a program that improves and expands even more quickly than XyWrite. Every two or three months a new version appears that works more smoothly and capably than the last. A major revision is promised for later this year, with a new and intelligible manual, menus for beginners, and a wordlist for correcting misspelled words. Automatic reformatting, indexes, and the integration of the editing and printing programs will follow. PC-Write has an almost miniature feel to it, but that is because it is a compact jewel of a program that does a great many things well and will soon do more. Perhaps someday it will even rein in its cursor, which is at present another of those bright flashing blocks.

As for the much-ballyhooed program Microsoft Word, the cursor is one of the things it does right. Whatever Microsoft Word does right, it does better than any other program. What is frustrating is that it does so many things wrong. If you have a laser printer and want to typeset your own magazine with various fonts and sizes and in triple columns, then Microsoft Word may be the only program to buy. If you need to be certain that everything you write appears in an absolutely consistent format, as a corporation might want for its business letters, then Microsoft Word can do the trick. It will take you forever to get it to work properly, but it will work eventually. You may discover afterward that WordPerfect or the new versions of XyWrite and Nota Bene could do the job almost as well and with less teeth-grinding, but Microsoft Word offers unique refinements, such as format measurements in centimeters and points, that may make it worth the effort.

For writing that needs less exacting formats, Microsoft Word offers other benefits. No other program is nearly as effective at displaying two or more documents, or two or more parts of the same document, on screen at the same time. This split-screen or "windows" feature can be extremely useful, despite the small amount of text visible in each file. You can write your draft at the top of the screen while consulting a file of notes or quotations at the bottom, and maintain a notepad at the right-hand edge as well. More primitive windows are available in XyWrite and Nota Bene (the latter's slightly easier to use), and also in PC-Write. (WordPerfect will not have windows until later this year or early next, although it now lets you switch back and forth between two different screens.) But only Microsoft Word lets you put different parts of the same file on screen and make revisions in each. With other programs, you have to put two different *copies* of the same file onto the screen, and any revisions you make in one

will not be made automatically in the other. Microsoft Word also can be told to use one window for displaying the text of footnotes whenever a footnote number appears in the main text in the other window. The program permits you to have eight windows open at once, a number that seems more suited to salesmanship than to any possible use.

When you shut Microsoft Word's windows, unfortunately, little else about the program seems attractive. It was designed originally to be used with a "mouse," a bulbous plastic object you push around a desktop in order to guide the cursor. (If you use the mouse with Microsoft Word, the program has *two* cursors, the nonblinking one controlled from the keyboard, and a flashing block controlled by the mouse.) The mouse has two buttons that you press in various combinations and sequences in order to tell the program how to behave. You can use the program with the keyboard alone, but much of its design, especially the layout of the screen, makes sense only when the rodent is in the works. Writers who like to take their hands away from the keyboard every few minutes to fondle a plastic toy and who always keep a large clear space open on their desks will find the mouse delightful. Others, sensing the gigantic wasted effort that went into making this complicated program work, may perhaps mutter: "Par-turient montes, nascetur ridiculus mus." The publisher, belatedly recognizing that the whole idea was wrong from the start, no longer sells the program and the mouse in one package, and the manual of the most recent version is directed mainly to those who only use the keyboard. But the program still insists on enclosing its text in a distracting double-lined frame that has no function except as a maze for the mouse-cursor to move in. And it still insists on wasting a line with the unhelpful information that the program you are using is called Microsoft Word.

That same line is also supposed to tell you what page you are now working on. The number it reports is usually wrong. Even after you type ten thousand words, Microsoft Word insists that you are still on page one—unless you tell it to "Repaginate," which you do by going first to the Print Menu. If you add or delete text later, the page number will be wrong again, unless you repeat the whole procedure. Microsoft Word, as you've guessed, is menu-driven, and it uses some of the most baroque and opaque menus ever devised. If you want to save your work onto a disk and then start writing something new, you first press the Escape key to gain access to the main menu. This takes some time. You then press T, meaning Transfer, to gain access to a menu that governs most, but not all, operations that move a file from one place to another. You then press S for Save, and then the Enter key. Then, after a seemingly endless wait, you start all over, pressing T for Transfer, C for Clear, and then confirming that you want to get rid of everything on screen rather than the contents of a single window. The program now makes you wait once again

before it lets you start writing. By this time you may have forgotten what it was you wanted to say.

One of the program's selling points is its use of stylesheets. After you figure out how to compile them, these permit precise and repeatable formats for such things as addresses, headings, summaries, postscripts, footnotes, and anything else you can type with the program. This is all very fine, but if you want to do something as simple as change the program's normal format for margins and tab stops so that you can use elite type rather than pica, for example, then you are in deep trouble. What you have to do is compile a "normal" stylesheet, and then, before you can start work, you have to copy this stylesheet onto every disk that you plan to use for storing documents. This is almost as bad as WordStar. Microsoft seems to have been too embarrassed to say anything about this procedure in the manual. The chapter on stylesheets maintains a stony silence on the matter, and only the barest hint is hidden away in an appendix of questions and answers. Every worthwhile program lets you personalize its "default" settings as much as you like. Microsoft, however, has its own ideas, and when I suggested to someone at the company that the normal stylesheet was an abnormal inconvenience, he seemed genuinely offended.

Microsoft's publicity emphasizes the unique flexibility of the program's control over the printer. What Microsoft doesn't tell you is that you'd better have a degree in programming if you want to print out foreign characters. And Microsoft doesn't warn you that the program's control over the printer may at any moment turn into an arbitrary tyranny. My copy of Microsoft Word insists on printing a solitary capital *B* in the margin of everything I print, two or three inches above the first line—although it sometimes substitutes a lower-case *e*, and twice, in an expansive mood, printed *noi* instead.

Like many costly programs, Microsoft Word is "copy-protected," which means you can't reproduce the program onto any disk other than the one supplied by the publisher. This is to prevent you from depriving the publishers of their revenue by giving away a copy to someone who might otherwise buy it. Copyright protection of this kind may seem reasonable enough, especially to authors who prefer readers to buy their books rather than use xerox copies. But the only real effect of copy-protection is to inconvenience honest users. Anyone who buys one of the special thirty-dollar copying programs advertised in the computer magazines can make a copy of a "protected" disk in seconds. And most fifteen-year-olds can do it without a copying program. But if you don't have a copying program and don't intend to give away illicit copies, you are rewarded with one inconvenience after another. If a speck of dust damages your program disk, you can use the backup copy provided in the original



package and hope that nothing happens to the backup while you send Microsoft a check for \$25 and wait for them to send you a replacement. Meanwhile, you have to go through the same initial setup procedure with the backup that you went through with the original. With programs that are not copy-protected, like WordPerfect, XyWrite, PC-Write, and (in its most recent version) Nota Bene, you can make as many backups as you like and use them either for a sense of security, or as a convenient way of switching from one standard format to another, or to experiment with the possibilities of the program without worrying about damaging the disk. (Nota Bene has replaced copy-protection with a reasonable scheme that requires you to put your name on the disk before it will run; they will only replace a disk if you send in a copy with your name on it.) "Protection," incidentally, is a euphemism used by software publishers in the same way it is used by gangsters. A copy-protected disk can suffer just as much damage as any other kind. Copy-protection merely prevents you from protecting yourself against the consequences of the damage. All this because publishers like Microsoft assume you are (1) a crook who will pirate their program, and (2) an idiot who won't know how.

When you buy a program of any kind, one benefit you should expect to receive is free access by telephone to answers to any questions you may have about it. Publishers are under no legal obligation to give help of this kind, but users have come to expect nothing less. One justification offered for the high price of software is the high cost of providing answers to questions phoned in by users.

The classic example of how *not* to provide this service is WordStar, always first with the worst. If you phone WordStar's publisher for help with that impenetrable program, you will most likely be told to go away and ask your dealer. As a computer dealer is best defined as someone to whom you explain your computer, this advice has seldom been considered useful. And if you asked for help in customizing the program, something you can do on your own in a few seconds with worthwhile programs, WordStar used to gouge you for four hundred dollars before it would supply a set of instructions.

In contrast, programs worth buying are also programs that will help you after you buy them. WordPerfect provides the best support of any word-processing publisher, but XyWrite, Nota Bene, and PC-Write are not far behind. If you have a printer that any of these programs does not yet know how to communicate with, the publishers will supplement the program at no charge, provided you send them a copy of the printer manual. WordPerfect has a toll-free number for customer questions and will phone you back rather than keep you on hold. Everyone I've spoken to at WordPerfect was knowledgeable and patient, and if they didn't know the answer to an especially arcane question, they volunteered to find out

and call back. (By the way, I didn't identify myself as a reviewer.) When I phoned about a minor aesthetic flaw in the help screens of a new program disk, they confirmed the error in their copies and sent a replacement immediately. Any correction in the program made in response to a caller is added to all future copies. XyWrite, Nota Bene, and PC-Write don't have toll-free numbers, but in every other way their level of support is equal to WordPerfect's. They too will call you back rather than keep you on hold and will send a revised disk if you discover a flaw in the program. Perhaps because these three are smaller companies, they are even quicker to respond to suggestions for improvements. Nota Bene, whose academic customers tend to work after business hours, may provide additional telephone support in the evenings. None of these programs leaves you with the sinking feeling that you are going to have to spend a lot of time and money getting the program to work after you spent a lot of money buying it.

At Microsoft, on the other hand, the support policy can be summed up in three words: It's Your Dime. Microsoft first lets you pay for the call, then keeps you on hold while subjecting you to canned music interrupted by recorded messages that suggest you might be better off calling later. I was sometimes able to get through to a human being within five minutes, but usually I gave up after fifteen. Once I made the costly experiment of waiting to see just how long it would take for my call to be answered—and waited a few minutes more than an hour. Whenever I did get through, the people I spoke with were either laconic but knowledgeable or friendly but ill informed. Those who didn't know the answers didn't volunteer to find out. Still, it could have been worse. Samna Word lets you ask questions, at your own expense, only during the first thirty days after you buy the program. If you need help after that—and you will—they allow you to pay them \$100 for the privilege of phoning them ten more times during the following year.

I almost forgot the thousands of writers still loyal to their Kaypros. If you are one of these, you probably use either Perfect Writer (in its early versions) or WordStar, the two programs that at different times were packaged with the machine itself. If you have Perfect Writer, stop what you are doing and order copies of Writer's Guide and Plu\*Perfect Writer. These are "enhancement" programs that you can add to Perfect Writer in order to make it do the things it should have done in the first place. Writer's Guide replaces the Perfect Writer menu with a far more useful one, and also provides instant word count, a command to restore erased files, and vastly improved control over formatting and printing. Plu\*Perfect Writer improves everything left untouched by Writer's Guide. It provides flexible cursor movement and powerful commands for formatting text, and it also lessens the original program's large potential for

disaster. These two enhancements make the original Perfect Writer a worthy program you can live with for years. Nothing, however, can salvage WordStar, and if you are using WordStar on a Kaypro, I can offer nothing but sympathy.

Edward Mendelson

### Publishers and Prices

Microsoft Word. Version 2.0. Microsoft Corporation, 10700 Northrup Way, Box 97200, Bellevue, Washington 98009. \$375 list price, available for \$225 from mail-order dealers.

NoBlink. Nostradamus Inc., 5320 South 900 East, Suite 110, Salt Lake City, Utah 84117. \$30, from the publisher only.

Nota Bene. Version 1.0. Dragonfly Software, 409 Fulton Street, Suite 202, Brooklyn, New York 11201. \$495 list, available from the Modern Language Association, to members only, for \$396.

PC-Write. Version 2.5. Quicksoft, 219 First N., #224, Seattle, Washington 98109. \$10 for the disk, \$75 for a registered copy, free through users' groups.

Plu\*Perfect Writer. Plu\*Perfect Systems, Box 1494, Idyllwild, California 92349. \$39, from the publisher only.

WordPerfect. Version 4.0. SSI Software, 288 West Center Street, Orem, Utah 84057. \$495 list, \$235 from mail-order dealers.

Writer's Guide. Interior Systems Software, Post Office Box 188, Joelton, Tennessee 37080. \$35 for the Kaypro II, \$55 for the Kaypro 10, from the publisher only.

XyWrite II-Plus. Version 1.5. XyQuest Inc., Post Office Box 372, Bedford, Massachusetts 01730. \$295 list, \$200 from mail-order dealers.

NOTE: The version listed is the one available at the time of writing (May 1985). A "version" of a program is roughly equivalent to an edition of a printed book. Version 1.0 corresponds to the first printing of the first edition, 1.1 to a revised and expanded second printing, 2.0 to a rewritten second edition.



## Comment



### WORD PROCESSING: A CONTINUING GUIDE FOR THE PERPLEXED

#### Hercules at the Crossroads

In an episode of Laclos's novel *Les Liaisons dangereuses* a nobleman composes a letter in bed using his paramour as a writing table, and discovers he can take a pleasurable break from work without leaving his desk. Although a computer cannot provide so agreeable a setting for the act of composition, it offers diversions and excitements of its own. Writing and revising go faster with a computer than with anything else. The speed is exhilarating but dangerous. When you use a computer you have the power to make sentences disappear from one paragraph and reappear in another merely by hitting one or two keys. You may think you are focusing all your attention on the logic and euphony of your prose, while hidden within you, secret from yourself, a teenager is playing Pac-Man.

You needn't feel embarrassed if, having savored your colleagues' envy when you announced the arrival of a computer, you continue to use a more primitive instrument for composing your first drafts. Paper is a less exotic and distracting medium to work in than a computer screen, and your writing is probably better for it. You needn't regret that you were born too soon to start using a computer in kindergarten. Computerized papers turned in by high school and college students are no better than typewritten ones and are in many ways worse. The logic tends to be associational at best, and the prose includes odd torsos of sentences evidently left behind in the rush of on-screen revision. Certainly you should do all your work at a computer—from first draft to last—if you must rush your copy to a newsroom, if you suffer from the kind of writer's block that only a computer screen can cure, or if you work in one of the academic fields that regard strong prose as a sign of mental weakness. But if you fit none of these categories, put oil in your typewriter and keep your yellow pads dry.

I emphasize these points only because you may have heard that a computer will make your writing not only easier but better. You might just as well expect a car to improve your sense of direction. Two sets of writers gush most volubly over their computers and swear they will never use a typewriter again. One set includes writers who find the computer so exciting that they fail to notice their writing has turned dull. The other includes writers who have decided which computer to buy but haven't yet bought it. A computer is never more efficient, never

more effortless, than during the weeks before you bring it home. Prospective owners blaze up in wounded anger if you suggest that their beloved machine is not the brightest and fleetest ever built. They thrill with anticipation when they describe the word-processing program they have chosen and attribute to it powers that the program's authors never dreamed of. (They probably learned about the program from an "independent consultant" who worked them to such a pitch that they forgot he was also an authorized dealer.) Then the machine and program arrive, and reality prevails. The computer and its owner soon settle into a domestic routine, interrupted by humdrum arguments when the owner mistakenly types an instruction to delete a page rather than print it or when the computer overheats and stops, and by mutual triumphs when fingers fly across the keyboard and a hundred perfect pages emerge from the clattering printer.

The first of these Comments on word processing appeared in the Summer 1985 issue of *The Yale Review*. It urged you to buy a computer (IBM, not Apple) as an aid to writing and to select one of a small number of word-processing programs (none of them WordStar) designed for writers, not typists. Last year's recommendations remain valid on the whole, but the better programs now exist in new versions that deserve a second look, and other kinds of programs, such as spelling checkers, deserve a first. Further reports will appear every year or so, as long as I remain capable of writing them in English. The editor has agreed that the moment I start writing about sysops, opcodes, baud rates, or COBOL, he will reassign me to the marriage announcements.

Computer magazines often present their product reviews in the form of scientific-sounding reports from their "testing laboratories"—which normally seem to consist of a pair of filing cabinets with a door across the top and a digital watch. Here at *The Yale Review*, the experts who work in the Computer Analysis Complex refuse to dirty their hands with scientific tests, but they have developed advanced techniques for measuring a crucial element of all computers and computer programs, one that has not yet been discussed in the literature of the field. We at the Complex call this the Pac-Man Factor. It is a measure of the degree to which a computer or program, because it is exciting to use, distracts you from the task for which it is ostensibly designed. The higher the PMF, the less likely you are to accomplish anything during a session at the computer—even though you may have a wonderful time while not accomplishing it. A low PMF is almost a necessary feature of a worthwhile product, but it is not sufficient in itself. A product may be incompetent as well as unexciting.

Another matter rarely mentioned in the computer press, except in a guarded way, is the brutality with which computers can torment their owners. Alert specialists observe that some computer products have names that sound like waterfront bars where the patrons wear leather—MailMerge, Number Smasher, RAM Drive, MultiMate—but the public at large suspects nothing. Most computer owners silently endure the treatment they receive from their machines, and many convince themselves they enjoy it. Their reaction is a variety of the Stockholm Syndrome, in which hostages develop sympathy for their violent and irrational captors. Three terror techniques are especially favored by today's sophisticated computers: the blinking cursor, the noisy fan, and the flickering screen. The forces of civilization have devised defenses against the first two of these and are working on the third.

When IBM invented the blinking cursor about thirty years ago, I suspect that some high-level executive decided to use it in computers because there wasn't enough of a market among torturers. Now that it has become virtually standard among small computers, most of its victims think they could never manage without it. When I told a friend he could buy a program that replaces the blinking cursor on the IBM personal computer with an unblinking highlighted block, he replied through clenched teeth: "It—doesn't—bother—me." The program he won't buy is called NoBlink.\* No other program offers such immediate, long-lasting, and indispensable benefits. Besides making the cursor restful to look at, it speeds its otherwise sluggish motion across the screen. Earlier versions worked imperfectly, and you had to go through some contortions to make a copy of the program. In the current version the cursor sometimes disappears (it comes back when you hit a key), but it performs extremely well a task that in a more sensible world would not be necessary at all.

The noisy fan also has its partisans. When I remarked to another friend that his computer sounded like a refrigerator in heat, he shouted back: "I CAN BARELY HEAR IT." He was not interested in a replacement fan that makes less than one-sixth the racket made by the original while doing a better job of protecting the computer's circuits from their own heat. This fan, the PC Silencer (another of those alarming brand names) fits on the back of an IBM or similar computer. Before installing it with four screws, you use a tool supplied by the manufacturer to disconnect the power to the original fan. The whole procedure takes ten minutes and is reasonably idiot-proof. After hooking up the new fan and turning on the computer I felt a moment of panic when I didn't

\*Publishers and prices are listed on page 480.



hear the machine make its usual uproar. I only convinced myself it was working by looking at the screen. At night, in a quiet neighborhood, the fan is slightly more audible, but never annoying. It costs around eighty dollars, but silence is proverbially associated with precious metal. The manufacturer, who is helpful and reliable, also makes a noisier but more powerful model that may be useful if you need to cool down a computer loaded with a half-dozen extra gadgets.

The flickering screen presents a more intractable problem. All computer monitors commonly available use television technology that has scarcely been improved since its invention fifty years ago. The worst monitors—a category that includes all color screens—can induce eye-strain within minutes. The best take perhaps an hour. Tolerable monitors using entirely different technologies have begun to appear on the market, but the \$3700 price tag and fifty-pound weight of the model IBM offers for personal computers suggests that it may be a bit early to put in an order. The least bad of the affordable monitors for the IBM and comparable machines are the Amdek 310A (discounted at around \$150) and Princeton MAX-12E (around \$170). The Princeton has a slightly sharper image but, because its background is gray instead of black, less contrast; it is also more susceptible to glare. It makes a better first impression than the Amdek and may be slightly preferable, especially in rooms where no lights shine directly on the screen. Ten years from now we will wonder how we put up with either of them. (The celebrated screen on the Macintosh computer is even worse. The letters are tiny, and because the background, not the text, is illuminated, the whole screen flickers continuously.)

By the way, don't choose a monitor because you like the shape of the letters it shows on screen. The characters are shaped inside the computer itself, and the monitor slavishly displays whatever the computer sends it. And don't buy one of the costly devices that can raise the monitor to eye level. The higher the screen, the more of a strain it is to hold your head up to look at it. Take the monitor off the computer, put it on one of the cheap swivel stands that tilt it upward, and place the stand on your desk. Now read on.

### The Closed and the Open

Computers operate in different ways because their manufacturers pursue different policies. These are seldom what you might expect. Gray, regimented IBM, where the engineers wear white shirts and dark ties, makes the most chameleon-like and adaptable of personal

computers. Polychrome, anarchic Apple, where the accountants wear blue jeans and sneakers, makes a computer you can use only in the way Apple wants you to use it. This is by no means the sole reason why a writer would be foolish to buy an Apple Macintosh instead of an IBM PC, but it's one of the better ones.

When I was working on my earlier report, quite a few writers and academics told me they thought it was a good idea to get a Macintosh. That popular delusion seems far less common now, although it persists in odd pockets of opinion, notably in one or two universities where a central office has decreed that the only computer offered for sale will be the Apple model.

Among the achievements of the Macintosh is the highest rating ever recorded on the Pac-Man scale. When you use this computer, you move little pictorial symbols across the screen by pushing a plastic "mouse" around your desktop. At the touch of a button you can make an "icon" jump from one place to another or move it off the screen entirely; you can turn black icons white and white ones black; you can make menus pop into view and make new menus conceal all but the edges of old ones; you can move a box that encloses one set of symbols over a box that encloses another set, and you can enlarge or reduce the boxes at will; you can make an alarm clock appear; you can even use a "control panel" that looks like a child's fantasy of an airline cockpit; you can spend hours adjusting the volume of the computer's beeping sound. What larks! What freedom!

In fact, the Macintosh allows you no more freedom than you will find in Disneyland. Every one of its programs leads you through the same amusement park of mice, icons, and windows. It's an easy system to use, the way a tricycle is easy, but it's hopelessly inefficient for anything beyond the simplest tasks, and you must use it whether you like it or not. You probably will grow to like it, because one thing the Macintosh does best is help you flatter yourself. As you gain skill in guiding the mouse and clicking open windows you begin to feel a protective gratitude toward the machine. You may lose interest in the work you intended to do, but you will find alternate interests in abundance. The IBM PC is an object no writer has ever loved, although it gets the job done. The Macintosh barely gets the job started, but if you feel the need to give love to a machine, this is the one to buy. Its inventors made a careful study of its intended market and instructed the designers to make the exterior look as much as possible like a Cuisinart.

To be fair, one of the two word-processing programs available for the Macintosh—and the one that comes with the machine at no extra cost—has been improved since I reported last time. It can now handle

pieces of work longer than nine pages. The other program, Microsoft Word, was the basis of a comparison between the IBM and the Macintosh that appeared in a computer magazine last year. The reviewers tested the two machines by using the versions of Microsoft Word available for each and concluded that the Macintosh, despite its reputation, worked as quickly, perhaps even a bit faster, than the IBM. As Microsoft Word stands at the sluggish end of the scale of the many programs available for the IBM, this was the equivalent of comparing the hamburger sold at a hamburger joint with the one that a good seafood restaurant lists on its kiddy menu, and concluding that the hamburger joint is a better place to eat.

Even if an acceptable word-processing program were available for the Macintosh (there are rumors that one may appear this year), the Macintosh would still be unacceptably slow in its operations. A slow computer is far more distracting than a fast one. When you tear a sheet of paper from the typewriter and crush it into the wastebasket, at least you are doing something. With a slow computer, you constantly find yourself staring blankly at a blank screen while the computer does something invisible. The Macintosh comes with the programs MacWrite and MacPaint packed in the box, but when you stop playing with icons and try to get some work done, you discover that it also comes with something that is not mentioned in the ads—MacWait. Sooner or later you will learn to convert this to MacCoffeebreak. You can make the Macintosh a bit more flexible by installing some expensive gadgets, but the improvement is small in comparison with the price. For a new model called the Macintosh Plus, Apple recently announced further enhancements, but they seem too slight, too costly, and too late.

The IBM PC has a low, some would say negative, Pac-Man rating. Unless you buy video-game programs, a color screen, and special "graphics" circuitry that produces pictures as well as words, the IBM is a very unexciting lump of iron. If you want to repel invaders from outer space, you should try a different armory. If you want to work on a book, this is the place to go.

You communicate with the Macintosh by clicking buttons and dragging icons, but you communicate with the IBM by addressing it in the verbal language of its "operating system." The language of the IBM is called PC-DOS, that of the "compatible" machines that work in almost the same way is MS-DOS. (MS stands for Microsoft, the company that devised the language.) Although at first unsettling to native speakers of English, DOS has a fairly rational syntax that anyone who works with words can learn. Every computer manual ever written obscures this



syntax by teaching DOS the way a phrasebook teaches French—plenty of examples, not a word about sentence structure. Even the best of the separately published primers, *Running MS-DOS*, by Van Wolverton, assumes you lost all interest in grammar in the third grade.

DOS uses verbs, modifiers, and objects, but never a first-person subject. It provides rudimentary status-indicators: when you address a computer's disk drive you must include its honorific colon ("drive A:" not "drive A") or it pretends it doesn't hear you. DOS even includes the conditional mood, something impossible in pictorial sign-systems like that of the Macintosh. When a DOS verb is used with accusative or dative objects, it is normally an imperative, as in the command that (roughly) takes the form: "Copy this file there." When used alone or with a genitive object, it is normally interrogative; "Dir B:" means "What's listed in the directory of the contents of the disk in drive B?" Like human languages, the language of DOS has irregularities. Normal DOS usage suggests that the verb *format*, when used alone, should be understood as interrogative. If you use it that way, it can have as fatal an effect on the book you are writing as Henry II's interrogative "Who will free me from this turbulent priest?" had on Thomas à Becket. Fortunately, in situations like this, the computer asks you to confirm that you mean what you say. As you can do similar damage with the Macintosh while playing with its icons, you would be ill advised to believe the advertising ploy that assures you that the Macintosh is the computer for nontechnical people. The Macintosh is the computer for nonverbal people.

The most sensible computer for a writer to buy continues to be the venerable IBM PC, with two disk drives, 256,000 characters of memory capacity (256K of RAM, which stands for "random access memory"), and a "monochrome adapter," all installed at the factory. Don't buy a PC Jr., which is a toy. The simplest version of the PC XT, with two disk drives, costs a few hundred dollars more but allows you to add a few more internal gadgets than you can add to the basic PC. Most of these additional gadgets take the form of "boards" (or "cards") that contain memory capacity, telephone connections, or circuitry that lets the computer send information to the screen, the printer, or (as in the IBM monochrome adapter) both. If you are tempted to buy a "graphics board" instead of the monochrome adapter, don't. It isn't worth the price or the trouble. The cost of adding to the IBM's memory capacity is now so low that you might as well buy a memory board; most programs will work more quickly, and you will be able to revise lengthy pieces of work more easily. To install a memory board you need to

remove and replace six screws and perhaps push a couple of switches with a ballpoint pen. Beginners should perhaps choose the Quadram Quadboard or the AST SixPack (whichever is cheaper), equipped with 348K of memory; each includes a battery-powered clock that saves you the trouble of telling the computer what day it is. Adept's will be better off with the Tall Tree JRAM-3, whose memory capacity is much greater. With any of these, you can use some of the added memory as if it were an imaginary disk drive hidden inside the computer. You can copy programs to this "RAM drive" in order to make them work more quickly or to avoid the annoyance of shuffling real disks in and out of the machine.

Because a computer's memory capacity and the storage capacity of its disks are both measured in the same unit (a "K" equals a thousand characters), the difference between them tends to baffle a novice. A computer's memory is the amount of information it can hold in its mind; the storage capacity of its disks is, in effect, the size of the books it can consult when it needs new information for its memory. A computer is like a stage actor: if it has a limited memory, it must stop every now and then to consult the script. A floppy disk is the equivalent of a volume of about two hundred double-spaced pages. For some tasks, the computer needs more information than a floppy disk can hold, and you must take away one disk and give it another, and then perhaps exchange the two disks once again. A "hard disk" (or "fixed disk") is the equivalent of a large anthology, compiled in part from material copied from floppy disks. A hard disk remains in the computer permanently; you don't have to shuffle it in or out.

The convenience of a hard disk comes at a price. Keeping it organized and finding your way around in it is never easy. If the hard disk fails—and eventually it will—all its information goes with it. This is why you should periodically copy everything from a hard disk onto a stack of floppies. Most hard disks produce a continuous high-pitched whine that stops only when you turn off the computer. Smaller and quieter models, mounted on boards that you plug into the computer the way you plug in a memory board, began to appear last year. They now cost about a thousand dollars. When the price drops to half that amount, as it probably will later this year, you might consider buying one. Until then, you can manage perfectly well with floppies. In any event, get more memory before you buy more disk storage.

You should order the latest available version of DOS (the one with the highest number) if you are buying a computer for the first time. If you already have a computer equipped with floppy disks and are using

the version of DOS numbered 2.1, you will gain nothing by investing in a newer version. But if you have a hard disk, you can make your life easier by getting DOS 3.1 (or higher) and using the new "subst" command to ease your way around all those directories that are rapidly filling the disk.

If you buy an "IBM-compatible" computer like the Compaq or Leading Edge, or a "generic" computer whacked together by a mail-order house, you can save a few hundred dollars, but you will be taking a gamble. When the ad describes a computer as "100% IBM-compatible!!" it means that, of the thousands of programs written for the IBM PC, the compatible machine can work with quite a large number. In fact, the program you want to use will almost certainly be among them. The risky moment will come later, when you find a use for a newer program or when you want to install a hard disk or memory board or some other kind of hardware. Many of these will work only with the IBM and one or another compatible model that may or may not be yours. Long before that time, you may also have grown disgusted with the ugliness of the letters that many of these compatibles display on the screen. (The same problem can arise when you use a non-IBM "graphics board" with a standard IBM computer.) If you insist on buying a compatible or any graphics board, first ask the salesman to show you some underlined text on screen. (Many products can't.) If he puts on the tolerant smile that salesmen use in order to show you that they pity your ignorance and says, "No one has ever complained," make a graceful exit.

The keyboards of some compatibles have a more sensible layout than the keyboard of the IBM, but all of them make you feel as if you are typing on a tray full of marshmallows. The Leading Edge uses marshmallows that are more stale than most, but only the IBM lets you type for hours without strain.\* If you buy an IBM PC, expect to be sneered at by a would-be expert who has just mail-ordered a Flybynight GizmoRAM at two-thirds the price. Next year, when you have installed one of the new "accelerator boards" that can make your computer run three times as fast as his ever will, it would be needlessly unkind to ask him how much mileage he gets from the old jalopy.

The older Apple computers, the IIe used in elementary schools and the IIC that parents think their children should therefore use at home,

\*Instead of spending \$200 on a replacement keyboard for the IBM, spend \$20 for plastic caps that enlarge the keys that are too small (available from Hooleon Company, Box 201, Cornville, Arizona 86325).



are far too limited for serious or even frivolous writing. They are also overpriced; you can pay the same amount and get a cheap IBM-compatible. Writing with an Apple computer is like cooking with an electric hot plate, but if an Apple II is what you have, you can at least use a new version of the WordPerfect word-processing program that has been adapted for the machine. It is limited by comparison with the IBM version of the program but is inexpensive and does far more than anything else you can find. In one respect it's superior to the IBM version: the cursor doesn't blink.

The new Commodore Amiga and Atari ST computers—both with high Pac-Man ratings—are known among programmers as “interesting” machines. That doesn't mean you can use them for anything.

I wish I could offer a clear recommendation for a printer. The quiet and fleet-footed laser printers still cost \$2000 or more. For the moment, if you prefer a “daisy-wheel” printer, one that works like a typewriter, you should probably get either the cheap and slow NEC 360 ELF or the quicker and costlier NEC 8850; both can print all the characters used by western European languages. I won't allow a “dot-matrix” printer in the house, but excellent cheap models from Panasonic and expensive ones from Toshiba tempt me to change the rules.

### Watergate-on-Disk

A few months ago a newspaper columnist based in Washington was startled to see this message appear on his computer screen:

\*\*\*INTERNAL SECURITY VIOLATION\*\*\*

The tree of evil bears bitter fruit,  
crime does not pay.

THE SHADOW KNOWS.

Trashing program disk.

He was using a program called Microsoft Access, which allows one computer to communicate by telephone with another. After the message appeared he heard some frightening noises from the machine. Later, he reported, he found that some work had disappeared from his hard disk.

Microsoft, the company that wrote Access and Microsoft Word, takes two different views of its audience. The division of the company that produces operating systems like PC-DOS and programs for use by other programmers and the division that produces Microsoft's consistently fine books about computers both write for an audience of intelli-

gent adults. The division that writes "application programs" for word processing or business planning writes for an audience of Pac-Man-addicted children. And it assumes that these children, if given half a chance, will steal candy bars and popsicles rather than buy them out of their allowance.

In an attempt to deny them that chance, Microsoft has traditionally issued its application programs on copy-protected disks. This means that although you can tell your computer to transfer a copy of a Microsoft program disk to a disk of your own, the copy you make won't work—unless you have used one of the special copying programs designed to make copies that will. Copy-protection produces nothing but inconvenience and risk for the owner of a program—when the original disk fails, you have to order (and pay for) another—but some publishers, including Microsoft, reason that someone who can get an illicit copy is someone who won't buy a legitimate one. Other publishers, like the makers of all programs recommended in these pages, rightly consider illicit copies to be stolen ones, but reason that an illicit copy can serve as an advertisement to someone who will eventually buy the real thing in order to get a printed copy of the manual, help by phone, and any new and corrected versions of the program itself. (Perhaps Microsoft reasons that if potential customers of its well-publicized programs had a chance to try out an illicit copy, they would discover that the publicity is more effective than the programs.)

Normally, copy-protection results in no more than severe annoyance, but during the past couple of years some companies have begun talking about protection schemes that would actively retaliate against anyone who tried to defeat them. One scheme was announced that would cause an illicit copy to set loose an electronic "worm" in your computer to destroy your work or your programs. To the newspaper columnist, who was using a legitimate copy of Microsoft Access, it seemed that the worm had broken loose and attacked.

When the columnist protested in print, Microsoft immediately began to perform a convincing imitation of the Nixon White House. The man in charge of selling Microsoft's application programs first said that the firm's executives hadn't had any knowledge of the matter until they saw it in the paper. "We don't know anything about the message," he told a reporter. "We don't want it in there." If the message wasn't exactly a third-rate burglary, it was the work of a "low-level" programmer who no longer worked for Microsoft. This seemed surprising, because the message that Microsoft didn't know about could be found on at least four versions of Microsoft Word and on different versions of

some of its other applications programs as well.\* Microsoft's next move was to blame the whole mess on someone else. The threatening message, together with a coded instruction to the computer to make some harmless but alarming noises, was merely a programmer's joke, they explained, never intended as a worm at all, but it seems to have been set loose on Microsoft Access because of some work done on the program by an independent company.

By this time, Microsoft realized that something had to go. It announced that it would drop the whole copy-protection scheme from Access and from one other program. It also said it would remove the threatening message from future copies of Microsoft Word (it failed to specify whether the resulting gap would last eighteen minutes), but would leave the copy-protection scheme in place.

No computer program, certainly not Microsoft Word, is worth the risks and restrictions of copy-protection, and there is no reason to buy a product that insults you with the implication that you are likely to misuse it. Microsoft has been threatening to release a new version of Word this spring. If it is not copy-protected, it may be worth considering, because the program has one or two useful qualities not found elsewhere. Until then, look elsewhere.

### How to Write

The word-processing programs that were worth buying last year are the ones worth buying this year. They are WordPerfect, XyWrite, Nota Bene, and—with fewer capabilities but at a much lower price—PC-Write. The programs that salesmen and consultants may tell you to buy instead are somewhat different this year, but although many frogs still occupy the pond, none shows signs of turning into a prince.

Samna Word and MultiMate, for example, have eliminated most of the absurdities I mentioned last time, but the changes are mostly superficial. The real reason to avoid these lumbering heavyweights is that they are designed for the job of typing what someone else has written rather than for writing something yourself. MultiMate especially: it thinks in terms of pages of fixed length (as in a business

\*Thousands of computer users had probably chanced upon the message while using a program called The Norton Utilities that displays on screen all the hidden contents of a disk. The Norton program can also recover work you have erased accidentally and perform various other useful functions.



letter) rather than in terms of "documents" that begin at the beginning, continue until they reach the end, and then stop. You have to wait every time you move from one page to another, and if you want to cut or add a few sentences on the page you worked on five minutes ago, you have to tell the program to repaginate everything and then wait until it not only calculates all the new page breaks but also copies the new version onto a disk. Both Samna and MultiMate include features you won't find in most others, perhaps to the others' credit. Until you figure out how to make it stop, Samna shades in whole swatches of the screen to represent the left and right margins of the page, in the manner of schoolchildren decorating their papers for a favorite teacher. MultiMate attaches a "document information" table to everything typed with the program so that companies can trace who typed the original and when. No one is crude enough to say so in print, but the point of all this is to help a higher-up fix the blame on a subordinate when a small error results in an expensive and embarrassing blunder. MultiMate is not the most reassuring program to use if you have no one to blame but yourself.

Perfect Writer, now the product of a multinational conglomerate, has been transmogrified into a menu-driven monster that trips over its own feet. WordStar is still WordStar.

As for the better programs, the general descriptions I offered last time still hold true, and I won't repeat every detail. PC-Write (at \$10 for the disk with a manual encoded on it for your printer to type out; or at \$75 for a disk, printed manual, keyboard diagram, help by phone, and copies of two future versions) becomes a more amazing bargain all the time, and its Pac-Man Factor remains low. Compared with the version available last year, the current one shows dozens of small improvements, but a more thoroughly revised model should have appeared by the time you read this. I'll offer a full report next time. The new PC-Write is designed to be more agreeable to beginners and to remove elements of the program that confused even the experienced. An entirely rewritten manual is promised; a part already distributed suggests that the whole will be a model of clarity. I should have mentioned last time that PC-Write only lets you move easily through about thirty-five double-spaced pages at a time. This limit will be removed in yet another version later this year.

WordPerfect has emerged from a thorough revision with all its old virtues intact and many new ones added. Best of all, to use the new version you need not unlearn the old. New features have slipped in unobtrusively; some annoyances have disappeared; the arrangement

on the keyboard of some rarely used commands is more logical; the screen can now be divided between two pieces of work; a few tricky tasks have become easier; nothing has become more difficult. If you have the previous version the publishers will send you the new one for \$45. My only regret is the disappearance from the new manual of the charmingly silly cartoons that graced the old one.

WordPerfect still has the lowest Pac-Man rating of any word-processing program. It can almost convince you that you are typing—without the inconveniences of typing—rather than computing. Absolute beginners find it less frustrating than comparable programs, and no other program lets you accomplish so much after learning so little. Last year a friend who bought WordPerfect used it to translate a book and write two or three essays, and then started reading the manual. (It didn't cost him much: educators can buy the program for \$125.)

Some highly sophisticated engineering lies hidden behind WordPerfect's elegant and understated dashboard. It has the least distracting screen of any word processor. Some functions that it performs with no fuss at all require both fuss and fury in others. (See how many steps the others put you through when you want to put a page number at the foot of the opening page of a section and put it next to your name at the top right of succeeding pages.) It lets you recover not only the last phrase or word you deleted from the screen but also the two phrases you deleted before that, and it's clever enough to understand that when you delete five adjacent words in quick succession you are making one deletion, not five. It displays the breaks between pages as a dashed line on screen, so you don't have to remember to ask it to warn you that "Sincerely yours" will appear at the bottom of one page and your name at the top of the next. (PC-Write shows the first line of a page in distracting reverse-video; XyWrite and Nota Bene, because of delays involved in showing page breaks, make you switch on a little taximeter at the top of the screen that tells you what page and line you're working on.)

For everyday tasks, the program's new features are less significant than the subtle improvements in the old ones. It's nice to see newspaper-style "snaking" columns arrayed across the screen, but you probably won't use them much. It's also nice to be able to use your printer as an electronic typewriter for envelopes and printed forms, and to use the improved spelling checker and new thesaurus (which I'll describe in a moment). It's a great help to be able to make the program tell you which of your obscurely labeled notes contains a reference that you know you have put somewhere or other. But what matters more often

are the ways in which the program works more clearly, precisely, and flexibly than before. You can now assign foreign characters to the keys you prefer more easily than with any other program (Nota Bene packs its keyboard with foreign characters, but more densely than you may need); you can glance more quickly into the contents of anything you aren't working on at the moment; and you can make the program perform routine housekeeping on your disks more effectively than anything other than the separate "utility" programs designed to do the same task.\*

WordPerfect is highly reliable and does everything within reason to prevent you from losing your work through accident or error. Some people may find it too officious. When you revise some existing work and then save the new version on disk, the program leaves the original copy on the disk until it has finished transferring the revised version. Other programs normally treat the original as a palimpsest and write the new version over the old, although if the electricity goes off in the process, you lose both. All this makes WordPerfect a bit slow in saving your work and cuts down the amount you can store on a single disk, but you may find the added security worth it.

Although WordPerfect works faster than almost every other program with its capabilities, it is markedly slower than XyWrite and the XyWrite-derived Nota Bene. WordPerfect has to figure out where the page breaks belong every time it moves from page two to page twenty-two, and this takes time. When I complained about this last year, I didn't realize that I had the program set up in such a way that this kind of movement took far longer than it normally does (and the manual didn't tell me, because it lists the choices the program makes available without describing the pros and cons of each), but WordPerfect still moves more slowly than I would like—eight seconds to move through twenty pages. For technical reasons that no longer seem as compelling as they once did, WordPerfect does not make use of all the possible combinations of keys on the IBM keyboard. As a result, it lacks keys

\*By far the best of the housekeeping programs is Xtree, which is elegant and efficient enough to buy even if you have WordPerfect. It lets you see what's on your disks, erase or transfer your work, and perform similar tasks without the tedium and errors these normally entail. This program is indispensable if you use a hard disk and invaluable if your floppy disks are littered with recommendations, lecture notes, letters, drafts, or anything else. Xtree is a pleasure to use but never a distraction.

that will take you in a single bound to the next or preceding sentence or paragraph, as *Nota Bene* can. You can set up your own key-combinations to do this in *WordPerfect*, but that means you can't use the same keys for displaying foreign characters or other uses.\*

Another weakness of *WordPerfect* is its inability to treat separate chapters as parts of a single book for such purposes as making an index or compiling lists of figures. The program does a very elegant and efficient job of indexing, but it can only do this conveniently with one chapter at a time, which defeats the whole purpose. To use a computer to index a book, you ought to be able to do something like this: when the page proofs arrive, you return to the disks that contain the manuscripts of the separate chapters and insert new page breaks that correspond with the ones in the proofs; then (or earlier) you "mark" the words and ideas you want indexed in the text, and tell the computer to compile a single index of all the chapters together. You can do this with *Nota Bene* (for a three-hundred-page book if you have two floppy disks, more if you have additional memory or a hard disk), but you can't with the current version of *WordPerfect*. A lesser inconvenience for scholarly work is that you can't see a long footnote and its surrounding text on screen at the same time, as you can with the new versions of *XyWrite* and *Nota Bene*.

On the other hand, you may find this balanced by *WordPerfect's* smoother handling of more mundane matters. To underline words in *XyWrite* and *Nota Bene* requires a lot of movement, and going back to insert a few letters in an underlined word can become a minor production. In *WordPerfect*, underlining exemplifies one of the program's most admirable principles: the tasks you perform most often should be the tasks you perform most easily.

\*To make one key-combination perform a complex task, you first type in a "macro," which is the computer equivalent of the paper roll in a player piano. When you tell a program to create a macro, it starts to record everything you do at the keyboard until you tell it to stop; you later press one or two keys to make the program repeat everything it recorded. You can use a macro to type out your return address, or to change the margins for different sizes of paper, or to do anything else you do often. Unfortunately, unlike a piano roll, a macro can't make the keys on the keyboard jump up and down by themselves. *WordPerfect's* macros are effortless to make but tricky to edit (you need a program that comes in a separate "options package"). Macros in *XyWrite* and *Nota Bene* can be frustrating to create but easier to manage. In *XyWrite* macros are called "save/gets," in *Nota Bene* "phrases," and in *PC-Write* "recording keys." In *WordPerfect*, and everything else, macros are called macros.



XyWrite II Plus has evolved into XyWrite III, and this in turn is the basis of a new version of Nota Bene that is scheduled to appear before this review does. All the good news about XyWrite III applies to the new Nota Bene as well.

XyWrite is the only word-processing program that lets you work as quickly as you think. If you want to turn from the middle to the end of a chapter, or search for a word you know is hidden somewhere among fifty pages, or change all the margin settings and paragraph indentations, or replace all your references to Shakespeare with references to Sir Francis Bacon, XyWrite will do your bidding in an instant. For a writer, XyWrite's speed is its overwhelming attraction. Its appearance on screen can be irritating, and it can be difficult to learn, but once you know how to use it, it never distracts you with hesitations or delays. If you find yourself staring blankly at the screen while using XyWrite, it isn't the program's fault.

XyWrite can do almost anything—and most of what it can't do Nota Bene can. Before you print your work you can tell XyWrite to preview the layout of the page with all footnotes, running heads, and page numbers in their proper places. Although you can't make changes in this preview version, you can go back to the program's ordinary display to fix anything that looks wrong—and save a lot of time and paper by doing so. If you want, you can now have as many as nine pieces of work or notes in different "windows" on screen, although I don't believe you'll ever use more than three. If you have two versions of the same chapter and can't remember which you want to keep, XyWrite will show you the places where they differ. If you don't like either version, XyWrite lets you get rid of more words more quickly than you can with any other program, and lets you start working immediately on something better.

The XyWrite manual, once a swamp, is now a garden. Elegantly printed, lucidly written, it assumes you are curious and intelligent enough to be taught the logic of the program as well as its repertory of commands. It comes with introductory booklets that let even a terrified beginner handle the essentials. Because XyWrite keeps adding new features every few weeks, the manual has been incomplete since the day it was printed. You have to study a terse list in the back to learn that you can now easily remove all the arrows and highlighted triangles that normally litter the XyWrite screen. Hidden in the same list is the news that you can tell the program in advance to put your second chapter on screen the moment you finish working on the first, and then do the same with the third. The manual doesn't tell you anywhere that you can

now have double-spaced text on screen. If you want the details, you can call XyWrite, where the people who answer the phone are sufficiently confident about the program to treat you like an adult. If you find something in XyWrite that doesn't quite work, they actually agree with you rather than trying to explain it away. A disk that fixes the problem arrives in the mail a few days later. (The early copy of XyWrite III that I used for this review still had some wrinkles and creases. The program should be smoother by the time you read this.)

XyWrite has improved its handling of page layouts. It doesn't come with the predefined "style sheets" that are so valuable a part of *Nota Bene*, but it now makes it simple to define your own. The manual scarcely begins to suggest the ease and flexibility of XyWrite's "style" command, which is far more sensible than its celebrated but labyrinthine counterpart in Microsoft Word.

XyWrite is the only program I know with a variable Pac-Man Factor. If you are intent on writing and aren't bothered by the program's utilitarian appearance on screen, XyWrite's PMF is very low. But if you get intrigued by the freedom given you by the program to modify the way it operates, its PMF can rise to dangerous levels. With XyWrite you can, for example, completely rewrite the program's elaborate system of providing on-screen advice. You can make any key or combination of keys perform any of the program's myriad functions or any combination of functions. You can teach yourself the basics of XyWrite's internal programming language and use it to do things unattempted yet in prose or rhyme. (Someone somewhere has doubtless set up XyWrite to brew a pot of coffee every time he hits Control-C.) The advantage of all this is that XyWrite is the least procrustean of programs. If something bothers you about it, it is designed to let you change it. David Erickson, XyWrite's chief author and holder of an advanced degree in wizardry, once said something like this: "Ultimately, the program belongs to the people who use it. I merely wrote it."

The trouble with XyWrite is that it hasn't yet fulfilled its enormous potential. It has surprising pockets of inconvenience and annoyance. The fact that you can make the keyboard layout more sensible doesn't balance the fact that it isn't sensible already. The program's more complex features could have been supplied with the pieces already linked, rather than being left for you to put them together when you need them. Its messages could have been translated into a language closer to English.

All this and more has been accomplished by *Nota Bene*, a licensed

adaptation of XyWrite produced by a separate firm. The new version of Nota Bene is still incomplete as I write this, but the program has evidently made a great advance over its first version. (If you already own it, the new version is certainly worth the \$40 charge for a replacement and the small effort of reeducation.) The keyboard layout still includes far more functions than the standard XyWrite keyboard in an arrangement logical enough to be remembered. It comes already equipped with foreign-language characters and an athletic variety of cursor movements. Much of the tricky maneuvering required by XyWrite, especially in working with footnotes and indexes, has been eliminated. Beginners now have menus that let them use the program without learning any commands at all (although at half-speed), while adepts can still take all the shortcuts they like. Many functions that seemed grafted awkwardly to the first version have now been fully integrated within it and work at a much faster pace. The appearance of the screen is somewhat less distracting than XyWrite's. Nota Bene's unique but inflexible "textbase," which permits indexing and retrieving any notes and other writings you have on disk—not the same as indexing the pages of a book—is scheduled for improvement, and some of its functions also can now be performed by commands included in XyWrite itself.

As a tool for scholarly writing and editing, Nota Bene has no competition. Both Nota Bene and XyWrite will create different kinds of footnotes in the same work (for example, lettered notes for textual variants, numbered ones for annotations), and both will include automatic cross-referencing (so that you can write "See footnote x" and have x print as the number of the note you have in mind), but Nota Bene will make these and similar feats easier to perform. Nota Bene also does much of the work of editing an index that XyWrite leaves you to do by hand. Nota Bene—but for now, not XyWrite—will be capable of working at the same time in Hebrew and accented Greek together with European languages, or in Roman and Cyrillic alphabets. (You will have to add to your computer an "Enhanced Graphics Adapter" card from IBM or its imitators and pay an extra fee to Nota Bene.) Through some programming written for Nota Bene by David Erickson, you will be able to type English or Greek text from left to right, hit a key and type some Hebrew from right to left, and then hit a key to switch back again. Nothing remotely like this is available with any other program written for a personal computer. Even if you don't use all this ingenious gadgetry, with its temptingly high Pac-Man Factor, you will certainly find Nota Bene to be the best of all programs for serious academic use. You may find it the best for most other uses as well.

## How to Spell

Before you decide a computer can solve all—or any—of your problems, have a look at one of the programs that check your spelling. All the ones I've seen perform as advertised. Each reads through any piece of work you have on disk and asks you if you want to change or retain any word it finds that doesn't match the words in its encoded vocabulary list. Each gives you confidence that you can send off your learned article or job application without making anyone suspect you of illiteracy. And each includes at least one spelling mistake in its manual—usually of *their-for-there* variety that no computer program can catch.

Spelling programs come in two kinds. The traditional ones check every word of your work after you have finished writing and let you correct all your errors and typos at once. Certain newer ones lurk in the shadows of your computer while you write and can be summoned up to confirm the spelling of a word you are doubtful about or to offer a list of synonyms if you want to use a different word instead.\* The first kind is most useful for writers of books and essays, the second kind for journalists. You can now buy spelling programs that aren't content to lurk in the background until summoned but beep at you every time you use a word that isn't part of their limited vocabulary. This kind is useful to no one.

If you have WordPerfect you won't need any of these separate programs. You can call up WordPerfect's own speller to check a word or to offer synonyms while you work, or you can use it after you've finished to proofread a whole chapter—or a few revised paragraphs in the middle of a chapter. The design of the WordPerfect speller makes more sense than any other and requires the fewest and most intuitive responses to its messages. It won't let you replace one error with another; it automatically suggests alternate spellings that you can insert by pressing a single key; it can add as many words to its vocabulary as you like; it is the only speller of any kind that recognizes foreign-language characters. Its thesaurus, which has a richer vocabulary and more precise distinctions than any other, lets you browse through synonyms of synonyms just as you can with a printed version. The program works at only moderate speed on a floppy disk, but it can be made to zip along nicely if you have a lot of memory in your computer. Last year's version permitted some odd misspellings to slip through its net. This year's is more discriminating.

\*Earlier versions of XyWrite and Nota Bene could not be used with the lurking programs; the new versions can coexist with them if you make some adjustments specified in the manual.



Of the separate programs, MicroSpell is by far the best. This is the XyWrite of spellers. It doesn't look pretty on screen, it offers a range of options that at first seems confusing, and it has some petty annoyances—but it works at astonishing speed and is more ingenious and helpful than any of its rivals. Although its encoded dictionary is not especially large, it recognizes that a word like *arbitrariness* is made up of a root and suffixes that it understands. It automatically suggests alternate spellings and has an uncanny ability to guess the word you meant to type but didn't. The program insists that you confirm every use of a word followed by an apostrophe-s (other programs quietly assume you intended a possessive), but it still lets you proofread a long article much faster than any other, and it never lets you doze off while waiting for it to get to the next word. The program's author is equally helpful and will supply a special version to suit just about any program you own, including all those recommended here. (XyWrite and Nota Bene use the standard version.)

Word Proof II doesn't come with a printed manual and doesn't automatically offer alternate spellings, but it's inexpensive, quick, and great fun to watch. All the mildly unusual words in your work flash by in a little window while the program hunts for a word it doesn't recognize at all. When it finds one it opens another window that offers you various ways to correct the word or ignore it. With windows popping open all over the screen, the program's Pac-Man rating is agreeably high and gets higher when you discover that it can also provide anagrams. You can only add six hundred words to the program's vocabulary, but if you quote a lot from foreign languages, this is the program to buy anyway, because it lets you skip over any passages that you don't want it to bother checking against its list of words. (MicroSpell can be told to skip over passages marked off in advance, but you have to remember to put in the markers first and remove them later.) Word Proof has a rudimentary word processor of its own that lets you revise style and content while correcting spelling errors. It offers synonyms, but too slowly and ineffectively to make you ask for them often.

If it didn't suffer from one drawback that entirely disqualifies it, a program called Webster's New World Spelling Checker might be the best spelling program of all. It works quickly and cleverly and presents the most elegant display of information on screen. It offers at the start an alphabetical list of words it doesn't recognize in your work, so you can tell it to ignore foreign words and proper nouns before correcting any errors. Alas, the program stops dead without doing anything at all if you ask it to scan a piece of work longer than about twenty

pages—fifteen if you have a large vocabulary. I wish I could recommend a program that is otherwise so well designed, but until Mr. Webster addresses this problem, you would do better to consult Dr. Johnson.

The Word Plus, the oldest of the spelling programs, is too slow and expensive to buy now, but if you already have a copy you needn't rush out and get something different. A companion program, Punctuation & Style, has some uncommon functions that may justify its high price. The "Punctuation" part of the program is a well-behaved copyeditor that warns you of such things as unclosed quotation marks or parentheses, missing or excess spaces and capitals, and repeated words. "Style" chides you for using the passive voice or any of a long list of muddy and windy phrases. "Style" is a busybody, but "Punctuation" quietly saves you from the kind of mistake you generally notice only after it has made you look foolish in print. Next time I'll report on a new program called Grammatik II that claims to duplicate these functions but also, being more up-to-date, slaps your hand when your writing is sexist.

The best of the lurking-in-the-background programs is the Random House Reference Set. You can use one key to check the spelling of the word under the cursor, or another to list synonyms, and you can insert one of the suggested alternate spellings or alternate words by pressing yet another key. The program does its job quickly and straightforwardly, and it lets you insert predefined text into your work if your word-processing program doesn't provide macros. Like WordPerfect, when it offers lists of synonyms, it lets you look for further synonyms of the words it displays. None of these thesaurus programs can approach the wealth of a printed book, but the Reference Set seems less impoverished than the others. Unlike the other lurkers, it includes an after-the-fact spelling program as well, although this works more slowly and awkwardly than the better programs sold separately. Still, no other spelling program does as much for the money.

If you judge computer programs by their publicity, then the best ever made is a spelling program that somehow got named Turbo Lightning. In parts of the computer press it seems to have been confused with an as yet unreleased program, *The Second Coming*. The cover story in one magazine said Turbo Lightning will change the way you do just about everything. It in fact does somewhat less than the Random House Reference Set, while making a lot more fuss. It uses the same lists of words as those in the Reference Set, but it doesn't let you look for cross-references in the thesaurus (which works painfully slowly), and it's incapable of understanding that *it's* is a common con-

traction. It claims to be adaptable to different word processors, but it doesn't warn you that you will probably have to fiddle with its key-assignments if you want your word processor to continue to function.

One of Turbo Lightning's claims to fame is its ability to beep at you every time you type a word it doesn't like. This is annoying in itself, but the program compounds these bad manners by taking up so much of the computer's attention that it can't immediately display your typing on the screen. Until you tell the program to stop honking and leave you in peace, it makes you feel as if you are stuck in a traffic jam in a molasses factory. The publicity for the program asks you to understand it as an "information engine" that will soon let you use your computer to look up any reference work you choose. This engine may be slowed by its inability to recognize anything other than ordinary English letters: it understands *façade* as two non-words, *fa* and *ade*. The company that makes Turbo Lightning is headed by an expatriate Frenchman who seems to have forgotten what his native language looks like.

Word Finder, one of the first of the lurking thesauruses, is reportedly something of a best-seller. Some of its buyers may be book publishers in search of a convincing demonstration of the superiority of the printed page over the magnetic disk. Although the head of the company that produces the program says, "We abhor copy protection," the original program disk is copy-protected. After working your way through a setup procedure that requires you to encode your name and address on the disk (while it displays messages reminding you not to share the program with your friends), you can then make copies of the essential part of the program, although you now have to wait for the computer to display your name and address—and the name of the company and much of its staff—every time you start work. It took me less than a minute to find a situation in which Word Finder causes a computer to freeze up, so that any work in the computer's memory would be lost. (This situation, the DOS "copy con" command, presents no problem to the other lurking programs.) When Word Finder does start working, it works slowly. You will get very tired of seeing the message, "Just a moment . . . while I look up the word."

The program seems to use a dialect of English that you may not have encountered elsewhere. In this dialect the synonyms for *recommend* are *advise* and *counsel*, but not *urge*, *propose*, or *endorse*. The verb *set* does not mean *congeal* or *calibrate*. *Test* is not a noun and *wonder* is not a verb. But the synonyms of the verb *goof* include *lollygag*, *loll*, and *lounge*. If Word Finder is not much use as a thesaurus for the dialect in which you write, its lists of synonyms are so zany that you may want to buy it for its

entertainment value alone. Is *terse* too terse for you? Word Finder offers *breviloquent* instead. Do you overuse *thaumaturgic*? Alternate it with *sorcerous*. Does *harass* sound too strong? Substitute *tantalyze*. Looking for a synonym for *gnostic*? Try *discerning*, *insightful*, or *knowing*. The program's "linguistic editor" says in a press release: "Word Finder allows you to adjust your writing image." That states the case exactly.

## How to Read

People who make a career of predicting the future used to collect large fees for announcing that the advent of the computer heralded the end of the printed word. Since then, monthly computer magazines have broken the five-hundred-page barrier, and every day a forest is transformed into computer manuals, and another into books that explain the manuals.

Not all these books are worthless. *The Whole Earth Software Catalog*, edited by Stewart Brand (Quantum Press/Doubleday), now in an inadequately revised second edition, gets overexcited by new products that turn out to be duds, but has more practical good sense in its chapters of general advice than you can find in any other computer book. *Getting Started With the IBM PC and XT*, by David Arnold and others (PC World Books/Simon & Schuster), offers reassurance to the beginner, as does Cary Lu's *The Apple Macintosh Book* (Microsoft). For Pac-Man fans who want to convince themselves they are doing something useful, *The Fully Powered PC*, by Burton J. Alperson and others (PC World Books/Simon & Schuster), includes a disk packed with programs that let you spend many enjoyable hours customizing your machine so that it can save you a few seconds. I already mentioned *Running MS-DOS*, by Van Wolverton (Microsoft), as clear and informative as it is handsomely designed.

If you are tempted to buy a book about a word-processing program, you may need a different program instead. You can turn over a whole library while learning to use WordStar, but the three books devoted to WordPerfect add nothing to the manual. Of the dozen books that have sprung up to explain Microsoft Word, two are published by Microsoft itself and another has been announced from the same source. If you raise an eyebrow over a publishing firm that first issues an inadequate manual for one of its programs, then suggests that you buy two or three of their books to make up for the deficiency, you are not alone. The most informative book on the subject is *Microsoft Word for the IBM PC*, by Philip Lieberman and Philip J. Gloe (Howard W. Sams), which lists



errors in the manual and faults in the program and includes a disk with practice exercises. The early chapters of *Word Processing Power with Microsoft Word*, by Peter Rinearson (Microsoft), almost supplant the manual. The later chapters suggest roundabout ways of making the program perform such tasks as compiling an index, which it was never designed to do; in most cases it would be simpler to do the job by hand. These chapters convey to the unhappy user of Microsoft Word the unintended but unmistakable message, "You should have bought WordPerfect."

Computer magazines have begun to characterize their readers as "power users." Whether this means that they are powerful users of the computer or users of power is left flatteringly vague. Until advertisers recognized these people as a major source of income, "power users" were known as "computer nerds." The magazines try to appeal either to an audience interested in computers in general or to an audience that owns one type of machine. The magazines of the first type divide into those like *Byte* that are too technical for anyone but specialists, or those with names like *Generic Computing* that are too simple for anyone at all. The exception is *InfoWorld*, the weekly paper of the personal-computer industry, which has enough gossip, shoptalk, and scandal to be interesting even if you don't get excited about computers. *InfoWorld* was the *Washington Post* of the Microsoft Access affair and is the only computer publication available on newsstands that prints stories embarrassing to large corporations. Its product reviews, though uneven, are not extensions of the advertisements. A weekly column by John C. Dvorak provides cheerful and stylishly-written inside reports on corporate vanity, incompetence, and greed. Stuffed shirts are constantly writing in to cancel their ads or their subscriptions after Dvorak mentions their company.

The magazines devoted to individual machines are published by men and women who know which side their disks are buttered on and are unlikely to offend their advertisers. Useful information can be found there anyway, often by peering between the lines.

Each of the two widely available magazines concerned with the IBM PC takes its character from the coast on which it is published. *PC World* has a manner that may be described as California counterculture corporate. *PC Magazine* provides a mixture of skepticism and hype that could only originate in New York.

*PC World*, published monthly in San Francisco, presents itself in laid-back style, with plenty of fashionable white space and new-wave pastels. Many of its articles consist of mind-numbing waffle about the future by people like Jerry Brown, or dreamy celebrations of people

with great tans who make lots of money with their personal computers. The magazine's product reviews sometimes have a tenuous relation to reality. Some of the products praised in its pages exist as little more than a gleam in a programmer's eye. When judging programs actually on the market, the feature the magazine values most is the Microsoft label. Most issues include an article or two that may be useful to the beginner or the adept. Last December's special issue on the latest trends in computing managed to include no useful information whatever, although the publisher found room for four full-color photographs of himself.

*PC Magazine*, published biweekly at the commercial end of Park Avenue, printed twelve pages of puff on Turbo Lightning but is also capable of reporting that a product doesn't work. Its issues consist largely of product reviews and useful advice printed in a layout as tightly packed as that of the *New York Times*. The table of contents is hard to find among the reams of ads at the front, but because the magazine falls open to the index of advertisers at the back, you can compare mail-order prices quickly. Like *PC World* (but more frequently), the magazine prints short programs that you can type in yourself. Some of these are quite useful, like one that makes the irritating Caps Lock key on a computer keyboard act like the Shift Lock key on a typewriter.

The product reviews in *PC Magazine* have improved over time. A blockbuster survey of word processors early this year was discriminating and mostly accurate. The mistakes in last year's survey indicated that the editors didn't understand the basics of the program they use in the office. The difference between *PC World* and *PC Magazine* is epitomized in their approaches to copy-protection. *PC World* printed a survey of its readers' attitudes on the question, complete with multicolored graphs. *PC Magazine* tested the programs designed to defeat copy-protection and reported which one picked the most locks. The editor of *PC Magazine*, apparently in an attempt to rival the cult of personality fostered by the publisher of *PC World*, prints occasional photographs of himself, but only in black and white.

Owners of the Macintosh can choose among a larger variety of magazines. Most of them, like the machine itself, are long on diagrams and short on words. Three stand out. *The MACazine* prints the least wide-eyed reviews. *Mac World* prints the prettiest pictures. *MacUser* prints a column by John C. Dvorak that explains what is wrong with the Macintosh.

Edward Mendelson

## Publishers and Prices

- MicroSpell. Version 6.24. Trigram Systems, 3 Bayard Road, Suite 66, Pittsburgh, Pennsylvania 15213. \$140, \$65 for educators.
- NoBlink Accelerator. Version 3.1. Nostradamus Inc., 5320 South 900 East, Suite 110, Salt Lake City, Utah 84117. \$40.
- The Norton Utilities. Version 3.1. Peter Norton, 2210 Wilshire Boulevard, #186, Santa Monica, California 90403. \$100 list, \$60 from mail-order dealers.
- Nota Bene. Version 2.0. Dragonfly Software, 409 Fulton Street, Suite 202, Brooklyn, New York 11201. \$495 list, available from the Modern Language Association, to members only, for \$396.
- PC Silencer (fan). PC Cooling Systems, 31510 Via Ararat, Bonsall, California 92003. \$80.
- PC-Write. Version 2.55. Quicksoft, 219 First North, #224, Seattle, Washington 98109. \$10 for the disk, \$75 for a registered copy, free through computer users' groups.
- Random House Reference Set. Version 2.0. Reference Software, 2563 Boulevard Circle, Walnut Creek, California 94595. \$90.
- Turbo Lightning. Version 1.00A. Borland International, 4585 Scotts Valley Drive, Scotts Valley, California 95066. \$100, \$55 by mail order.
- Webster's New World Spelling Checker. Version 1.2. Computer Software Division, Simon & Schuster, 1230 Avenue of the Americas, New York, New York 10020. \$60 list, \$40 from mail-order dealers.
- Word Finder. Version 2.2b. Writing Consultants, 300 Main Street, East Rochester, New York 14445. \$80.
- WordPerfect. Version 4.1. WordPerfect Corporation, 288 West Center Street, Orem, Utah 84057. IBM version: \$495 list, \$215 from mail-order dealers, \$125 for educators (call WordPerfect for details). Apple version: \$179 list, \$125 by mail order.
- The Word Plus. Version 1.4. (Also: Punctuation & Style, Version 1.2.) Oasis Systems, 2765 Reynard Way, San Diego, California 92103. \$120, \$85 from mail-order dealers.
- Word Proof II. IBM Personally Developed Software, Box 326, Wallingford, Connecticut 06492. \$40.
- Xtree. Version 2.0. Executive Systems, 15300 Ventura Boulevard, Suite 305, Sherman Oaks, California 91403. \$50.
- XyWrite III. Version 3.04. XyQuest Inc., Post Office Box 372, Bedford, Massachusetts 01730. \$395 list, \$320 from mail-order dealers.

NOTE: The version listed is the one available at the time of writing (February 1986). A "version" of a program is roughly equivalent to an edition of a printed book. Version 1.0 corresponds to the first printing of the first edition, 1.1 to a revised and expanded second printing, 2.0 to a rewritten second edition.