4 Making Your Word Processor Work for You

When researchers first began to use word processors, they used them rather like typewriters: they still wrote a manuscript by hand, and handed it to the typist for typing. But now they had the luxury of treating the typescript as a draft that could easily be changed—by marking it up and handing it back to the typist for revision.

All this has changed. Most of my fellow academics do all their own word processing. All of my research students have done so for some years now. Most undergraduate assignments are produced by the students on word processors. Many professional consultants and officers in government departments produce all but the final versions of their reports on word processors at their own desks. This has profoundly affected the way research can be carried out and reported.

I am assuming in this chapter that you have basic knowledge of how to operate word-processing programs. To produce a good thesis or report, you will need far more than this, but the word-processing programs commonly available today include all the required features. I will now suggest how to get the best out of your word processor; to make it work for you.

Presentation

Reflect on the aims of the writers of word-processing programs. They didn't just sit down at their desks and say, 'Wouldn't it be

nice to write this feature or that capability into our program'. Instead, they had many sessions with experienced writers, typists, typesetters, book editors and so on, and listed all the features that might be desirable. They than estimated the computer memory that might be required, and put the features in some order of priority. This led them to reject some features that were desirable but not feasible within the constraints of available computer power, and they finally produced a program that embodied the best combination of desirable features at that time. Experience by users revealed the limitations of the programs and, as computer power increased, the programmers produced new versions that overcame the problems, and built in new features. We have now reached the stage where programs are so sophisticated that it is almost beyond the power of single individuals to make use of all the features. I have laboured this point to indicate that you should approach the learning of the capabilities of programs by saying, 'This is what I want to do; I know the programmers will have provided me with the capability. All I have to do is find it'.

Nowhere is this more apparent than in the question of presentation. The program can't do your creative thinking for you (not yet, anyway!), but it is very good at helping you to get things down in a good and clear format. More recent programs check your spelling for you, and even make suggestions about your grammar. Programs can also do footnotes for you, and help you with your list of references and your table of contents.

Formatting and style sheets

At secretarial colleges, typists are taught the importance of using a clear and systematic *format.** *You* will have to learn to do this

* 'Format' here means the physical layout of the thesis or report. It includes such things as: the choice of type for both normal text and headings; spacing before and after headings and between paragraphs and lines; page margins; justification of lines; headers or footers, including page numbering; choice of reference system; layout of tables and figures, including their captions, and so on.

for yourself. For example, you should put all chapter headings on a new page, using the same style and format. You should give all major section headings within a chapter the same style and format: one that is less obtrusive than that of the chapter headings. You should leave the same space before all section headings. Captions to figures should all have the same style and format. All new paragraphs should have the same space before them, and should begin with the same indent (except for the first paragraph after a heading, which may have no indent at all), and so on. All this will help your readers to navigate their way through your report or thesis.

Before you start typing anything for your report or thesis, you should think about this, and devise styles and formatting rules that are appropriate for your type of report. Above all, make up your mind that, right from the outset, you will not use just any old style, with a view to tightening things up later when you are more confident about what you are doing. Begin as you mean to continue.

Fortunately, most current word-processing programs have a feature built into them that will help you to do this, while keeping the flexibility to change your styles later if you wish. It is called a *style sheet.** This is the way it works. First, you decide on the various styles you intend to use in your document. You will have different ones for chapter headings, section headings, sub-section headings, normal text, quotations, captions to figures, indented material labelled with a bullet (large dot) or a number, and so on. You can use the styles already built into the program (default styles), or invent your own. (As I shall explain later, you should use the default *names* for the styles, even if you change the details of them.) For each *style* you will specify the typeface you wish to use (Times, Geneva etc.), type size, type character (bold, italic, outline etc.), any justification (left, right, centre) or indenting, any space before or after the paragraph,

* I am using the word-processing program Word 5, and will use the descriptive language of that program. Other programs may have slightly different features, or use different language to describe the same features.

and any special instructions (for example that a heading is not to appear by itself at the bottom of a page without its succeeding paragraph, or that a paragraph is not to be split between two pages). Each style is specified as a variant of a previously specified style. Usually you would start by defining the *normal* style (to be used on ordinary text), then specify other styles as variants of it. This is an important point, as I shall explain shortly. These styles are automatically collected by the program as a *style sheet* for the document you are working on.

Once you have decided on the desired styles and have specified them and entered them on your style sheet, you can start typing. As you type, you label each paragraph with the desired style. (Even a heading is a paragraph—a paragraph is merely defined by material that begins after you insert a <paragraph> or <return> marker, and ends when you insert the next <paragraph> or <return> marker.) You can make the program do this for you more or less automatically, as follows: each style can be labelled with a *next style.* For example, you give *normal* style the next-style label of normal style also, so that you will remain in normal style from paragraph to paragraph. When you come to the end of a section, you have to label the next paragraph with a style *heading 2* for a section heading, or *heading 3* for a subsection heading, but you specify the *next style* for both of these as *normal,* so that the paragraph following a heading will automatically be in normal style. As you build up your document, you will have labelled every single paragraph with some style.

In this way, you have already achieved consistency in formatting. Paragraphs will always have the same indenting, and the same space between them; all section headings will be in exactly the same style, and so on. But you have another enormous advantage. Suppose you decide, when you print out a sample page or so, that the titles for figures are not really the way you want them. If you have given all figure titles the same style, say *heading 5,* all you have to do is re-specify this style into the desired format. Every paragraph you have labelled *heading 5* will automatically be changed to the new *heading 5* style.

Another great feature is that if all styles are variants of *normal*, you can change the typeface for the whole document by merely changing the typeface of the normal style. I use this capability myself all the time. I prefer to print my documents in 12 point Times, because it gives a readable and compact printed page. However, this is not easy to read on the screen. Therefore, I type on to the screen using 12 point Geneva, which *is* easy to read on the screen. Then, before printing I change the typeface in *normal* style from Geneva to Times. Since I have based all styles on normal style, the typefaces in all of the document will be changed to Times, except where I have deliberately specified contrary instructions. You will quickly see many other ways to use this flexibility. For example, your superior or supervisor may wish to have draft material submitted double-spaced, to give room on the print-out for suggestions and corrections. Before you print the final document, you can then change *normal* from double-spaced to single-spaced. A word of warning, however: such changes may result in page breaks occurring in different places, so you must check the consequences before printing.

Finally, you can easily transfer a style sheet from one document to another. If you are working on a joint document, you can arrange for all participants to use the same style sheet from the outset. If you are collecting documents from several different authors who have used different style sheets it is not too late to bring them to a uniform style, although it will be much more laborious than if you had started off on the right foot. Recently some colleagues and I edited a book with contributions from eighteen different authors. We adopted a style sheet and forced it on every contribution before we started our editing. This was quite a task, but the flexibility it then gave us was well worth while.

Spell-checks and grammar-checks

Most word-processing programs include a routine for checking spelling. It checks every word you have typed against a dic-

tionary built into the program. If it can't find the word (either because the word is not in the program's dictionary or because you have spelt it wrongly—sometimes because you have inadvertently omitted the space between two words), it will invite you to respond. You can respond either by ignoring the warning, and telling it to get on with its searching, or by accepting the invitation to change the word to a preferred spelling. I strongly urge you to use the spell-check. Very few people are infallible spellers or proof-readers. It is as well to have oddities questioned.

However, although the spell-check is very good at picking up typographical errors, it can't make decisions for you. Typical problems are people's names or place names, and words for which there are alternative spellings. In the case of proper names, the temptation is to tell the program to ignore its questionings, and go instead to the next area of doubt. This is a mistake. I have read several reports which were superbly free from typographical errors in normal words, but were rife with errors in the spelling of proper names (often with the same proper name spelt differently at various places). You should check any proper name the first time the spell-check comes to it and, when you are satisfied that you have got it right, add it to the dictionary installed in the program. The second problem is words for which alternative spellings are permissible (*-or* or *-our*, and *-ize* or *-ise* are the most common). The most important constraint here is that you must be consistent. Before you start, determine your preferred spellings for these words, and keep to them.

Finally, don't rely on the spell-check to proof-read for you; although it will pick up misspelt words, it won't distinguish between, for example, *there* and *their*, or *affect* and *effect*. Similarly, it won't tell you if you have left a word out.

A grammar-check, which is contained in the most recent programs, may also help. Grammar-checks operate a bit like spell-checks. They look at every sentence, and make checks such as: does it contain a verb; is it too long and complicated; does

the subject agree with the verb (plural subjects must not have singular verbs); is the verb in the passive voice (permissible, but should be used sparingly); are stock phrases being used (examples: 'over and above', 'in order to', 'part and parcel'), and so on. The trouble with grammar-checks is that English is such a complex language, with such tricky grammar rules, that the program often has to 'think' for an interminable time before asking its questions. Even then it sometimes asks silly questions, and you have to be a reasonably good grammarian to know when you should ignore it and when you should pay attention to it. Consequently, most of my colleagues will not use the grammar-check.

I have persisted with it because, despite these faults, it makes me ask myself questions about grammar. In particular, I have found that I over-use the passive voice (you will not see that fault in this book, thanks to the program), and that my sentences tend to be too long and complicated. If you cannot work out what it is saying to you, don't abandon it. Instead, seek help from someone who is a better grammarian than you are. Treat the check as a critical friend, not an enemy that you should run away from. I expect that the next generation of grammar-checks will be cleverer and more user-friendly than the present ones.

References

Word-processing programs usually have referencing systems (see Chapter 5) built into them. You can stop at any point and insert a *note* (probably your word-processing program, like mine, calls them *footnotes* rather than notes, because the default setting does collect them at the foot of each page). You can give each note a number or symbol yourself, or you can ask the program to automatically number them, which is preferable. The number (or symbol) will appear as a superscript in the text, and also as a duplicate on a separate part of the screen. You are invited to type in the text of your note against this duplicate number. If later you wish to add another note higher up on the same page,

all you have to do is insert a new note marker in the text. The notes will automatically renumber themselves, and you simply type in the text for the new note on the separate part of the screen. Conversely, if you delete an existing reference number from the main text, the note text that went with it will also be automatically deleted, and the other notes will be renumbered automatically.

Notes are usually collected at the end of each page as *footnotes.* When the page is printed out you will see the superscript number in the main text and the footnote text at the bottom of the page, separated from the main text by a dividing line. If you have more than one reference number on the page, the footnotes will all be collected automatically on that page. However, if you wish, you may instead collect the notes at the end of a section (for example, at the end of each chapter, as *chapter notes*) or in a consolidated listing at the end of the document (*endnotes*).

Wherever you put them, the notes have to be backed up by a consolidated alphabetical listing of all the references in them. When I am using the system of referencing that I've just described (the *numbered notes* system), I copy all notes with a reference in them on to a separate document, which I call 'References'. It is then a relatively simple matter to convert all the references in this document to a listing with authors' names first and then, using the sorting sub-routine in the word-processing program, to generate a list of references in alphabetical order.

At present, a different reference system, the *name and year* or *Harvard* system, is more popular for theses and reports than the numbered notes system. Your word-processing program will also help you to use this system, in conjunction with a reference data-base built up by either yourself or your organization using a program such as *Endnote.* In this program you build up a listing of references much like the old card-index system used by a previous generation of researchers. Each entry consists of the usual listing of author, title of article and journal, or of book or chapter of book, year of publication, and publisher

and place, together with an abstract and keywords. This reference data base can be used quite independently of your thesis or report as a personal literature recording and accessing device (using author's name or keywords or title of book or journal to search for material). However, it has the great advantage that you can interface it with your report or thesis to automatically draw up the list of references at the end.

Whichever system of referencing you use, the word processor offers the advantage that it will help you to maintain the match between the references cited in the text and the references appearing in your consolidated alphabetical list of references, or bibliography. It will help to prevent you from inadvertently omitting from your list references that have been referred to in the text, and will also help to prevent you from retaining references in the list that are no longer referred to in the text. It will also automatically sort them into alphabetical order.

Tables

The more sophisticated programs have routines for constructing tables. As these routines are rather complex, you might be tempted to abandon the attempt to use them, and to construct the tables using tabs (I often find students trying to construct tables without using even tabs, but by lining up columns with the space-bar). However, if you are going to construct an appreciable number of tables, it is worth spending time to master the table routines. If you have done the tables properly, you will be able to change the typeface or size without risking a disaster, as you would with tabs. (Rarely does one see a report without at least one entry having been displaced to the wrong column; this just won't happen if you use a table routine.)

Figures

You will sometimes find theses or reports in your library with all the figures collected together at the end of each chapter, each

on a separate page. This was a product of the typewriter age; you won't find them like that in a book. The word processor enables you to enter them in much the same way as in a book: as close as you can get them to the place where they are first mentioned in the written text, and not on a separate page from the text. There are three ways of doing this:

- If your word-processing package has a reasonably sophisticated graphical routine built into it, you might consider using it to draw all your figures. This method has the advantage that you can edit the figures at a later date in the light of rewriting or alteration of the text. However, you will have to accept the limitations of the graphics routine, which might be quite considerable.
- Draw all your figures using a separate specialist graphics package, and import them electronically into your text. You will not be able to edit them while they are in your word-processed text—but you can delete them, go back to the original version in the graphics package, edit that, then re-import it.
- Draw all figures by hand on separate sheets of paper, using a consistent graphical style. Leave enough space in the word-processed text to physically paste the figures in after the pages have been printed. Of course, it is rarely possible to edit these and, if you wish to change them, you will have to redraw them.

The second of these methods is probably the best, but it does mean learning how to use another complex package, and you may not have the time to do this. Whichever method you use, you should go to some trouble to ensure consistency of style within the figures, especially if there is written material actually on the figures themselves, such as labels on the axes of graphs. You should produce the titles, or captions, of all your figures, together with any explanatory material and references to sources, in a consistent style, using your word-processing package. Don't attempt to do these graphically.

Table of contents

A *table of contents* is exactly what it says: a listing of what is contained in the thesis or report. It usually includes the titles of each chapter, with a *very* brief listing under each title of what is in the chapter. It functions as a map of the thesis or report—what is in it, how its various parts relate to each other, and how to find your way around it. It is placed at the front of the report, and you may expect it to be read first. The table of contents should not be confused with an *index*, which is a listing of important words and ideas appearing in the work, given in alphabetical order. Its function is to help anyone to check whether a subject they are interested in is dealt with in the work and, if it is, to find it. An index is located at the end of the work, and will not be read before the work itself; in fact, it is unlikely to be read systematically at all. The most recent word-processing programs have routines for generating both tables of contents and indexes. I shall discuss only tables of contents here, as it is most unusual to have an index in a thesis or report.

If you give your chapter titles the style *heading 1*, your section headings the style *heading 2*, your sub-section headings the style *heading 3*, and so on, you can use the *table of contents* facility in your program to print out a table of contents from these headings. This can be done at any level of detail you wish—for example, you might include only chapter headings and section headings, or you might also include sub-section headings. This facility automatically lists the page number on which each heading occurs. If you make any changes after generating your table of contents the page numbering may be upset, so you should remember to run the table-of-contents routine again, right at the end.

This facility can also be used to generate a *list of figures* and a *list of tables*. Just give your figure titles the style *heading 5*, and your table titles the style *heading 6*. Then ask the table-of-contents routine to run you a list of all entries of *heading 5*, and a separate list of all entries of *heading 6*.

Writing, rewriting and editing

So far, I have mentioned only the ways in which the word processor can help your *presentation.* Although these are very valuable, they are almost trivial compared with the big breakthrough that I mentioned in the previous chapter—the reuniting of the research with the writing. To do this, it is necessary that you be able to write as easily and creatively on the keyboard as you can with a ball-point pen on a piece of paper.

Three years ago I spent a period of study leave at another university, writing a book and doing the necessary research for it. Each morning I went to the government publications part of the library with an exercise book, wrote summaries of arguments, and copied data. Then I took a book or two out, and brought them back for reading at home, usually making notes of them also. (I should have entered these in *Endnote* to build up my own reference system, as discussed earlier, but at that time I didn't have a computer at home.) Finally, I went into the computer room and started writing my book. Often it was not easy. Groups of students were there, talking about their joint reports. (They should have been doing that elsewhere, or perhaps the university should have had a project area, fitted with computers, where noise and activity was to be expected. Once, libraries were completely quiet areas, but now project areas are usually set aside in them in such a way that noise from them will not disturb those who wish to read or think.) Others were printing drafts on dot-matrix printers (very noisy; fortunately quieter printers are now becoming competitive in price). But most distracting of all were the 'woodpeckers'. Students would come in with handwritten drafts and laboriously copy them on to the screen by pecking away at the keyboard with one finger of each hand.

It took me quite a while to work out why the woodpeckers bothered me so much. It wasn't the noise so much—one can learn to ignore most sounds, as long as they are not conveying a message that demands attention. That was just it: the message

kept coming to me, 'You are wasting your time, and destroying your creative opportunities at the same time'. I wanted to jump to my feet and tell these complete strangers to do it another way.

The great breakthrough—writing on to the screen

When I bought my first computer in 1986 my two daughters, who were both secretaries, told me that it was essential to learn proper fingering, and to learn to touch-type. They gave me their old typing lesson books. I think they were getting their own back in this role reversal, but I followed their advice and spent tedious time learning how to do it. I commend their advice to you. Not only does this skill give you the opportunity to type faster and with less physical stress; it is also likely to help you with the great breakthrough—writing on to the screen.

If you too are a newcomer to computers, you will probably start by doing a bit of creative writing with pen and paper, as you have always done, then copy it on to the screen by typing on the keyboard. At this point you might print what you have done, and annotate the printed copy with improvements and corrections. You will then type in these alterations to produce an improved version. *Don't!* Instead, force yourself to think through your improvements on the screen, rather than on paper. Quickly you will learn the power of the standard editing devices built into the program, and you will rejoice in the clean, edited version produced immediately, without any crossings-out, insertions, arrows pointing where things are to go, and so on. I promise that, if you persist with this, in only a day or so you will suddenly say to yourself, 'I did it: I thought a whole new sentence on to the screen'. From that moment on, your life as a writer will be transformed. Quite apart from saving time and paper, and eliminating the double handling by an external party, the hired typist, you will have opened the door to the whole possibility of integrating your writing with your research, so that writing itself becomes part of the research process rather than something that happens when the research has finished.

Structure and the 'outline' view

In Chapter 2 I urged you to devise a draft structure for your thesis or report before writing anything. In Chapter 3 I suggested how you might start to write drafts of bits of the report, using this structure as a framework. Your word-processing program may have a facility to make this process much easier. The material that you type is normally scrolled continuously down the screen; if you had a long enough piece of paper to print it on, it would appear as one continuous script. This version of what you have typed is called the *normal view* (or in some programs the *galley view,* because galleys are the continuous prints produced by a typesetter before the material for a book or newspaper is broken down to fit on to pages).

Other views are available in some programs. A *page view* breaks up what you have typed into pages, complete with headers, footers, page numbers, footnotes etc. If your program has this facility, select this view, and you will see on the screen how your typed material will appear when it is printed as a report. Although this is obviously a very useful facility, you won't usually do your word processing using this view. The problem with *page view* is that it takes much more computing time to make editing changes, as they might have repercussions on other pages and the program would have to repaginate the whole document to accommodate them.

The third view that may be available to you is the *outline view.* This breaks the material down into a hierarchy of material: unindented headings (which the default settings on your style sheet will label *heading 1,* and which you might reserve for chapter headings), headings indented once (which your style sheet will label *heading 2,* and which you might reserve for section headings); headings indented twice (*heading 3,* reserved for sub-section headings), and so on—and, finally, ordinary text. When you switch from *normal view* to *outline view* you will see this hierarchy expressed very systematically by the system of indents.

Three very powerful features are built into the *outline view*:

- Simple mouse or keyboard instructions permit you to suppress as much of the hierarchy as you wish. For example, you could hide all the ordinary text and leave only the headings. Or you could hide, in addition, all the sub-section headings, leaving only the section headings and the chapter headings. Or you could hide all but the chapter headings. This feature enables you to see very clearly the structure of the report, and to identify problems such as repetitions and logic gaps.
- You can insert additional headings in response to these problems, or move sections or even chapters around to improve the logic flow. You can also promote or demote a heading to a different level in the hierarchy. You can do this after you have hidden any ordinary text to help you to see quite clearly what you are doing. But whenever you move a heading from one place to another, or promote or demote it, it takes with it all its subsidiary material that you have temporarily hidden. When you have finished all of this rearranging, you can switch back to *normal view*, and you will see that it has all been rearranged. No doubt you will then have to do some editorial work to tidy up the logic. When you have attempted this, you may find that what seemed like a good idea won't really work. Just switch back to *outline view* and reverse the whole process, or try something else.
- Your program, as we saw earlier, will have built into it a facility for producing a table of contents from material labelled with heading styles. Your outline view can give you a draft of this table of contents. You can try just chapter and section headings, or you can call up the sub-section headings also, and see whether they improve the table of contents or make it worse. (I strongly recommend that you keep to just chapter and section headings—if you can keep the table of contents to one or two pages it gives the reader a very clear map of the structure of the whole thesis or report. This will be apparent to you when you look at alternative versions using the outline view.)