BSc. CSIT 4TH SEMESTER

*Writing with a computer*

***Using a word-processor***

The majority of writers now use computers (as word-processors) for their writing. The use of computers does not change the principles of good writing, but it does make achieving them easier in many ways. It also calls for extra care over the writing process. We are sometimes told that the so-called ‘electronic office’ will make our advice on writing unnecessary. We doubt that. Indeed, we think *more,* not less, training of ‘authors’ will be required as new technology makes it easier to prepare and duplicate ‘texts’.

Word-processing changes the way text is created and extended, and the ways in which writers think and work. At the simplest level, a word-processor is little more than a clever typewriter, with electronic correcting fluid. The main advantage of the word-processor is the ease with which mistakes can be corrected. Clean copies can be produced without the need to re-type the whole document. The labour of typing several drafts is eliminated, and the temptation to let a draft through with small mistakes disappears. Final copies are cleaner, neater, and should be error-free. Revision that corner-stone of good writing becomes a regular practice rather than a distant ideal.

With a manual typewriter, revisions *are* possible; but to see their effect properly requires complete retyping. The word-processor makes it possible to revise documents bit by bit, and to see the effect of each batch of alterations without having to go through the labour of re-typing the whole text.

We recommend that you use the same technique of rapid writing when you revise, as when you write the first draft: read rapidly, and mark passages, words, and sentences that need looking at carefully. If you stop for too long to wrestle with hydra of a sentence, you will distort your memory of the overall shape and flow of the writing. The techniques that we have found useful are to mark the passage with a row of stars, or to have a quick shot at drafting an extra sentence or two to clarify the point. We do no more until the next clean print-out is ready. Then, what is needed is usually clearer.

Typically, we find one of three things becomes obvious:

• the original sentence can be deleted, leaving the new sentence(s) to sit among

the rest;

• half of the new sentence can be deleted, together with half of the original

sentence, and the halves welded together to make a reshaped whole;

• a few more sentences are obviously needed, and they can be drafted in.

Which of these three will be needed cannot be seen easily until the text is reprinted, and one can read and revise a clean copy. The process of revising is reiterative; repeating it again and again can refine the text into something quite different from the opaque and sloppy original.

Easy and repeated revision is an enormous benefit that word-processing confers on the writer. But it is important to see that the new technology changes the *processes* of writing, not its principles.

Computers make many of the mechanical aspects of writing easier, and increased ease and speed (once the necessary keyboard skills have been learned), help writers overcome the difficulties inherent in composing coherent and cogent text. But externalizing thought in an orderly and stylish form is still not easy. For all their automation, computers are not thinking machines. They make it easy to take words out and put words in, but *you* still have to make the judgments about which words must be changed. The machines can save some time and much of the boredom involved in repetitive work. But they cannot compose texts for you. They cannot decide what information you need in a letter replying to a customer’s enquiry. They cannot decide how much data to include in your progress report. They cannot choose the most persuasive way to organize and express the information you know will be needed to convince a finance committee to give you capital for a project.

***Using word-processors to plan and organize documents***

A word-processor makes it easier to plan a document. Your first thoughts about the sections required can be typed straight into a ‘file’. If another arrangement of material subsequently seems better, you can shuffle those thoughts around easily. New notes, ideas, details, facts and figures can be inserted under appropriate headings. Do not worry about making final decisions about order in the early stages. A heap of notes can be put in one section in the order in which they are discovered. Then, you can use a print-out of that section to work out an order of sub-sections. The notes can be allocated to sub-sections by penciled directions in the margin. Back on the word-processor, you can re-arrange the notes quickly, and produce another print-out, if necessary.

Of course, it has always been possible to modify typescripts by the ‘scissors and paste’ method; but this produces a scruffy-looking text, in which it is hard to see, literally, the form and force of your argument. If you use a word-processor, it is easier to add notes about points that have occurred to you during a study session in a library or while you were listening to a talk. Ideas and facts scribbled on the backs of envelopes, and in the margins of books and papers, can be inserted quickly into the appropriate section of your document. As soon as the new information has been inserted, the scribbled notes can be torn up and thrown away, so that there is no build up of untidy fragments. Another print-out will enable you to see what you have achieved, and help you to see what further modifications and alterations are needed.

***Revising style***

As we have discussed, style is not just a literary idea: good style in informative writing is efficient use of words to communicate meaning. The word processor encourages revision of style, because it shows the writer *immediately*

on the screen the effect of breaking long sentences or reconstructing clumsily expressed phrases and clauses.

It becomes much easier to use a policy of writing rapidly, ignoring problems of precise phrasing during the creation of the first draft. Writers creating a text in handwriting or on a typewriter are tempted to pause and try to get things ‘right’ the first time through, because they know the labour of re-writing or re-typing will be so great. This interrupts the flow of ideas. Writers using a word-processor do not feel so inhibited by the labour that will be involved in revision. They know that it will be easy to insert and re-arrange words, and to re-print the whole or part of a page or chapter. Thus, the use of a word-processor encourages flow in writing, and rigour in reviewing the readability of text.

***Disadvantages in word-processing***

What are the disadvantages in using a word-processor? Strangely, the main one may be the sheer amount of writing one is encouraged to do. Word-processors are revolutionary tools that help in the creation of readable text; but they can just as easily help in the proliferation of mindless drivel. Another disadvantage can be the ease with which documents can be revised by the process of ‘cutting and pasting’. After a cutting and pasting operation, writers *should* re-read the whole section of text to check for awkward joints and unexplained references. However, we see an increasing number of documents that show signs of crude word-processing, where chunks have been cut out or carelessly shifted to other positions, without careful adjustment of the surrounding text. Probably, this happens because it is tempting to restrict one’s review of the quality of a rewritten section to the limited number of lines that can be seen on a single screen. Often, this is not adequate: it is essential to re-read and revise a much larger stretch of text, to ensure that the argument of a section or chapter remains coherent, and that the views expressed remain consistent.

We think four other points need to be emphasized:

• word-processors can encourage monotonous repetition of words or whole chunks of text;

• the ease with which the machines can revise and reprint text can lead to uneconomic use of their capacities;

• the ease with which the machines can up-date and add to texts can lead to verbosity;

• constraints imposed by the programs of word-processors and computers can cause writers to put the convenience of their machines above the convenience of their readers.

One of the chief enemies of good style is lack of variety. A feature of many word-processors is the ability to reproduce at the touch of only a few keys whole paragraphs of standard text, for insertion in a range of letters and documents. It is tempting for writers to ‘make do’ with wording they have used in a previous text to save themselves the trouble of thinking out the best way of expressing slightly changed ideas. The result is text that is monotonously repetitive and sometimes inexact.

Most word-processors enable writers to specify that given words are to be altered to different words throughout entire texts. For example, the word ‘initiate’ might be identified, and the instruction given to replace this word throughout with the word ‘start’. This could be a useful change; but lack of variety usually makes text indigestible, and there are many occasions on which ‘start’ is not a direct equivalent to ‘initiate’, especially in texts on computing. Editing should usually be done with a rather more delicate touch and greater sensitivity to the precise nuances of each word in its immediate context. Word processors can produce uniformity effortlessly and at staggering length: that is the danger. Used intelligently, they can save time; used thoughtlessly, they can increase the unreadability of texts.

We want to warn against the ease with which word-processors can revise and reprint text, leading to uneconomic use of their capacities. One great advantage of word-processors is that they relieve typists of the need to retype every word in successive drafts of texts. The financial investment in equipment is more than balanced by the saving of typists’ time, as the machines quickly make minor adjustments to rough drafts and then reprint the text accurately and in correct format. Unfortunately, however, speed and ease of revision can tempt writers to become increasingly slipshod in the composition of their first drafts. The number of drafts increases; eventually the overall cost of the completed document is as high as, or higher than, that of a normally typed document.

Another warning is against verbosity. Probably, in the next decade, computer manufacturers will perfect voice-recognition programmes. It is likely to be possible to dictate text, which the machine will reproduce in printed form. As so often, such a development has been anticipated in creative fiction. The hero of Lawrence Durrell’s *Tunc* and *Nunquam* has such a machine, called Dactyl. In the novels, as real life will doubtless verify, the result is sinister. Most everyday chat is, thankfully, ephemeral. It is easy to talk at length; anyone who dictates to a secretary or to a dictating machine knows that it is difficult to be brief and incisive while talking. In some ways, the sheer laboriousness of hand-writing is a saving grace: it forces the mind to think slowly and deliberately about the use of words, since each word written costs time and effort. Dictation tempts us to be expansive. But even as we dictate we are conscious of the human effort that will be required to transcribe these minutes of tape into pages of script. The ease with which machines will convert our ramblings into text will seduce us into undue loquacity. Although the invention of printing was a great triumph for civilization, few writers would deny that the speed, ease and cheapness of modern printing has produced an avalanche of vacant and repetitive books on every subject. The electronic revolution is undoubtedly as important as the printing revolution. There is an obvious danger that there will be an equivalent avalanche of vacant and repetitive business and research documents.

Finally, a warning against a shift in outlook that word-processors encourage. Already, in many companies, debates on writing techniques are stopped by comments such as ‘but our word-processor/computer will not accept that’.

Mainly, these comments apply to points of physical layout such as the best hyphenation of word-breaks at the ends of lines, or the indentation of segments of texts for emphasis or listing. We have found that even professional technical writers are beginning to think primarily of the convenience of their machines, and only secondarily of the convenience of their readers. The constraining influences of word-processor programs have an insidious effect.

Frequently, too, we have discovered that the word-processors that have been blamed *would* have allowed writers to do what they wanted to do, but to do that precisely would have required the writers to change the ‘default values’—the settings for margins, line-spacing or other features that a computer program uses unless it is modified by the user. In truth, the writers could not be bothered to make changes, so texts that were less than optimum were produced because of the writers’ laziness, and/or because operating a word-processor often requires a little more conscious effort than simply wielding a pen.

This catalogue of the ‘shortcomings’ of word-processors may suggest that we are hostile to the introduction of new technology to the writing process. Most emphatically, we are not. Every aid to efficient acquisition, manipulation, storage, retrieval and transfer of information should be used to the full. We wish simply to warn against the belief that electronic equipment will bring to the task of ‘composition’ the savings of time and effort it has brought to mechanical tasks like riveting or calculation. Regrettably, many people who ask us about word processors seem to imagine that they represent a dream come true— entirely effortless writing. But one of the oldest sayings in computing applies to word processing as much as to ‘number-crunching’. That saying is ‘GIGO’—garbagein, garbage out. Word-processors may save a typist’s time in drafting and final typing of a text: but if badly organized ideas, formulated in a verbose and vague style, are put into the machines, then the final text may *look* superficially attractive but it will be just as tedious for readers as any manually retyped text.

***Computer-aided writing***

The computer can speed up, and even automate, many of the routine checking tasks in writing. We are likely to see a growing range of computer-based ‘tools’. These tools (or programs) will lighten the burden on writers, and improve the quality of administrative and technical documentation generally. Their great advantage is their ability to help inexperienced or inexpert writers to produce more readable text. They act, in effect, as extensions to word-processors, and operate as simple sub-editors. The tools query parts of the text that do not conform to norms that have been established by the tool-creators.

The most obvious computer-based tool is a spelling-checker, now almost universal in word-processing software. In practice, most writers can spell most complicated words, but have a random set of minor errors in their spellings. And they make far more typing errors than spelling errors. Unfortunately, this means that a program to check spelling *reliably* must be very sophisticated—which many are not. Since a typing error is often very different in kind from a spelling error (as in the difference between *spearate* and *seperate*), different tactics are needed to correct it. An intelligent spelling-checker would have, for example, to notice when *and* has been mis-typed as *an,* since both words will be correct as far as the checker knows.

Another ‘tool’ is a program that looks for clumsy or cliche-ridden phrasing. In essence, what this tool does is very simple. For instance, *‘dict’* is a program built into the UNIX (TM) computer-operating system. It contains a list of phrases considered disagreeable—phrases such as ‘in this day and age’, ‘at the present moment’, and ‘in the author’s opinion’. The program has a device known to computer scientists as a ‘pattern matcher’. This recognizes the pattern of letters which make up one of these banned phrases, whenever it appears in a text, and prints a list of the banned phrases it has found, asking the writer to change them.

Later generations of tools have improved on the simple lists of errors made by early spelling-checkers and diction-checkers. Now, they use more sophisticated presentations, and make it easier for writers to insert corrections. They are extremely convenient to use, and we are confident that they will be improved to give increasing help in the campaign to improve the quality of documentation.

No doubt we shall soon have grammar-checkers available to support wordprocessing programs. Grammar has proved difficult to define with the logical exactness required by computer programming, as linguists working on automated translation between languages have discovered. But in principle there is no reason why a machine should not in the end be programmed to recognize, for example, every passive construction and convert some into active ones.

These new aids to writing could be sadly misused. The more powerful the machines to aid our minds, the more they separate users into the dull and the imaginative. A machine-user could decide to edit a text so that it contained

nothing but active constructions or nothing but passive constructions. This would produce a dull, repetitive piece of reading. However, the ability to recognize grammatical features could also be used intelligently; for example, to give writers information about the *proportions* of different structures in their texts, so that they could see if they were leaning too much towards one or the other. But the ability to manipulate language in word-processors will never relieve writers of the ultimate responsibility for writing varied, interesting and intelligent texts.

Undoubtedly, programs that will produce coherent commentaries on the style of texts are on their way. We urge writers to make maximum use of all the aids available to them, thereby releasing maximum time and energy for the ‘unautomatable’ activities of thinking, composing and re-appraising that underlie all effective writing.

***In summary***

Our contention, then, is that the development of word processors will not remove the need for attention to basic techniques of writing. It will not bring magic formulae to make writing suddenly effortless. The real effort in writing is in the thinking required for planning and preparing, in the judgement required for organizing and laying out, and in the continual need for sensitivity in the encoding of ideas in words and phrases. In comparison, the mechanical labour of producing and sub-editing texts is small. Electronic devices can reduce this mechanical effort many times, and therefore release energy and time for thinking. But they cannot reduce the effort of thought.