

# Some T<sub>E</sub>X Manuals

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## Abstract

Looking for the perfect T<sub>E</sub>X manual. How to reduce the frustration of manual readers and make manuals user friendly. This paper reviews a number of the manuals available to teach T<sub>E</sub>X. Weaknesses of current manuals and recommendations for future or budding manual writers are included.

## Introduction

In this first section, I would like to outline my credentials in relation to presenting a paper such as this to such a gathering of T<sub>E</sub>Xperts. I am too old to have been educated during the latest technological revolution, but I do have one of the pre-revolution skills, that is, an ability to type. While not being antagonistic to the new technology, I am cautious enough in my approach to take a fairly accurate count of the personal cost required to acquire the relevant skills. The obvious major cost is that of time, but that can be balanced against the three reasons which teachers in Ireland give for belonging to the teaching professions—June, July and August. Last summer, through helping a friend to type a manuscript, I learnt the rudiments of word processing using PC-Write. By October, I had forgotten most of what I had learnt. So I had no problem with attempting to learn a new forgettable skill this summer. But I do remember clearly the exasperation I experienced when using the PC-Write Manual. I fully expected more of the same this summer.

During the past year, I had to write a paper on a number of new textbooks for a new syllabus for English which has been introduced to Irish schools. As the T<sub>E</sub>X syllabus is not as familiar to me as the Junior Certificate English syllabus, I read “Mathematical Writing” by Donald E. Knuth, Tracy Larrabee and Paul M. Roberts, published by the Mathematical Association of America so that I might gain some familiarity with the concerns of technical writers. Generally speaking, the writers were urged to do the following: Keep the reader uppermost in mind; write for the novice; avoid jokes and jargon; watch out for grammar, etc. I was interested to note that user manuals were called “a blight on the industry,” but in general the emphasis

was placed on producing clear, comprehensible and, if possible, stylish papers.

In the poem “The Rape of the Lock,” the eighteenth century English poet, Alexander Pope, considers the possibility of the lock of hair having landed on the moon, as this is the place where was treasured everything wasted on earth, such as mis-spent time and wealth, broken vows, unanswered prayers, fruitless tears, unfulfilled desires and intentions, etc. Among the treasured items mentioned by Pope are

The courtier’s promises,  
and sick men’s prayers,  
The smiles of harlots,  
and the tears of heirs,  
Cages for *gnats*,  
and chains to yoke a flea,  
Dried butterflies,  
and tomes of casuistry.

My method of alleviating the tedium of re-reading my own prose because of a surfeit of “undefined control sequences” has been to base my essay on Pope’s “Essay on Criticism.” Linked with this is the question: How many of the manuals should be consigned to the “lunar sphere” to join the gnats’ cages, the tomes of casuistry and the time of June, July and August?

## Judging Ill?

’Tis hard to say, if greater want of skill  
Appear in writing or in judging ill;

Writing well or ill with the reader uppermost in mind is the topic in “Mathematical Writing.” Reading well or ill is a professional concern of mine. As a teacher of reading, I have some knowledge of the skills which are taught in order to improve one’s reading.

When I am teaching reading skills, I will introduce techniques such as Survey, Question, Read (known as SQR), skimming to sample a complete text, scanning to find specific information, the importance of anticipation, active rather than passive involvement with a text. Obviously the skills used in reading a novel are different from those used in reading a textbook. With a novel, the reader must start at the beginning when the secondary universe is being established, become involved with storyline, and through a process of anticipation, detection and plot revelation proceed to the resolution at the end. With a text book, a range of study skills are brought into play. The good reader is actively involved in the text, surveying and questioning, checking backwards and forwards, comprehending and executing tasks on the basis of that comprehension. Text books are structured so that each insight of the reader can be built on to deal with the next problem. A manual, according to the Shorter Oxford English Dictionary, should be a “a small book for handy use.” So what does a reader expect from a manual? I have no general answer, but this reader will look first of all at the index, then read the preface and the introduction, speculate about the dedication, and sample the first chapter carefully. Both surveying and questioning are involved here. I have surveyed the structure of the book, and I have questioned the personality of the writer whose style will be an important factor in my motivation throughout the book.

### Doubting My Sense

To teach vain wits a science little known,  
T' admire superior sense, and doubt their own.

The amateur word processor, not to mention the amateur typesetter, is governed by a sense of insecurity amounting to paranoia. One relies totally on the good temper of the final line of defense—the computer expert to whom one can speak. In my case, this person was Peter Flynn of the Computer Bureau at the University College Cork. On one occasion, it took me forty five minutes to move from the directory to my file. Eventually, I had to get help. This is the kind of problem that one encounters frequently, yet even the faintest memory of this problem seems to be obliterated entirely by expertise. My apologies to Peter — a “gnat” in an office has a high irritant value to those who work in that office, never mind how kind and patient they all are.

### The T<sub>E</sub>Xbook by Donald E. Knuth

Those Rules of old discover'd, not devis'd,  
Are Nature still, but Nature methodiz'd;

This book generates a wary approach. The first thing that struck me in the preface was that the author is going to tell lies and that “the later chapters contain more reliable information than the earlier ones do.” Whereas, I presume the author is not going to give me straightforwardly incorrect information, perhaps my approach should be to blame him for my typesetting mistakes. Then, we have the issue of *jokes* to enliven the dullness of the material. The problem with the jokes is that I may not appreciate them properly unless I understand the technical point that is being made. Already I feel as thick as two short planks. Then, there is the issue of the dangerous bends signs. These signs begin on page five. Unfortunately, I have been warned against them — “don't read the paragraph unless you need to” is what the Preface says. Am I to understand that the dangerous bends on page five are as much to be skipped as the dangerous bends on page 212? No, I presume not, but the fact is that I have been warned about trouble and being naturally lazy, I will skip the whole lot. Knuth has given me a variety of conflicting instructions — skip this lot, read that lot carefully, and I haven't yet got past the preface.

I found the notion of exercises in this manual (or in any other manual) unbearable. The first exercise is the one to ensure that one knows the correct pronunciation of the word T<sub>E</sub>X. However, when the answer is consulted, one is thrown into more confusion — what's a T<sub>E</sub>Xacker? I know what a hacker is, but I do not know what an acker is. This may seem like petty quibbling, but as the only solid information I have about computers is the necessity of great precision in following instructions, then being baffled by the first exercise is, in computerese, seriously unfriendly. Would the author not have been better employed teaching me how to typeset the name? A quick lesson and, if possible, guaranteed success and I would have been on my way as a well-motivated student of T<sub>E</sub>X.

What was helpful in this book? The comprehensive index was helpful, as was page 340. On this page are the commands for producing the format on page 341. I think that I would have handwritten this paper had I not found these pages. This book is for the serious student and not for the person who wishes to typeset as quickly as possible and have done with it. It must also be said that when I

ran into a problem, I was most hopeful that Knuth would provide a solution.

## The Joy of T<sub>E</sub>X by M.D. Spivak

But most by *Numbers* judge a Poet's Song

Pope had rhythm in mind, but I'll apply the line to Dr. Spivak's book. What interesting imagery! The same as that of "The Joy of Sex." My perusal of the index makes me look at the rectangular box that is a computer and wonder if copulation is rioting under that dull beige exterior. As there is only the one box, maybe it should be masturbation. Does this explain the failure of my computer to follow instructions — masturbation has finally blinded something. Really, it is hardly surprising that I am getting no results. Not only is the thing blind, but it is also stuffed to the gills with all these starters, main courses, sauces and pickles eaten in "sophisticated positions." In this context, I refrain from mentioning the dedication and hasten to do the first exercise, which I am told I skip at my peril.

The first exercise seemed somewhat pointless, but I did it in accordance with my sampling procedure. The exercise was: How many possible meanings does E loves Em only for Eir body? 1. He loves him only for his body. 2. He loves him only for her body. 3. He loves her only for his body. 4. He loves her only for her body. 5. She loves him only for his body. 6. She loves her only for his body. 7. She loves her only for her body. 8. She loves her only for his body. 9. A person of unidentified sex loves him for his body. 10. A person of unidentified sex loves another person of unidentified sex only for the body of that person and so on. It seems to me there are twenty seven possible meanings for this sentence. The answer in the back of the book is one, two, four or eight, depending. At this stage, I became somewhat irritated, and I won't waste any more of my time doing pointless exercises. Furthermore, I feel doubtful about continuing to expose my obvious incompetence as

A fool might once himself alone expose,  
Now one in verse makes many more in prose.

A criticism of this book is that I was unable to find a definition of the word "macro." This word is used on the front cover, so I looked it up in the index. There is no entry for macro in the index, and it is not explained either in the preface or the introduction. Yet, I learn from the acknowledgements that the author was less than kindly disposed towards computers some years

previously. I was able to find a definition in Knuth, and Leslie Lamport very kindly explained what a macro is on the back of his book. Apart altogether from the problems outlined above, my sampling of this book is extremely dubious. The reason for this is that I can hardly count, and this book is designed to help mathematicians. Maybe mathematicians will be helped, and I sincerely hope so.

## PCT<sub>E</sub>X by Michael Spivak

But of the two, less dang'rous is th' offence  
To tire our patience than mislead our sense.

There is neither preface nor introduction, nothing written on the back cover of the book, not even a dedication. There is a title page. The pagination begins again for each new chapter. There is an Appendix A and an Appendix F. In Appendix F, there is a Fabulous Festive Font Finale which contains More Marks, Magically Magnified and Methodically Marshalled. To this feast of alliteration, there is an F word missing which I would dearly like to add. The index is on the page after 7-14, but Appendix A also has an index which begins on the page after A-58. Therefore, there are endless possibilities for confusion. The table of contents is on page iii from which one can deduce the structure of the manual. Black tabs mark the beginning of each new chapter. Each chapter also has its own separate table of contents, but one has to turn back a page because these pages have been excluded from the system of tabs. My patience was so tried that I failed to follow the correct instructions for the vanilla style and abandoned the book.

## L<sup>A</sup>T<sub>E</sub>X by Leslie Lamport

Survey the *whole*,  
nor seek slight faults to find  
Where nature moves,  
and rapture warms the mind.

I am so grateful to Leslie Lamport for the straightforward way in which he gives information. I looked at the table of contents, and every nerve ending began to jump when I saw a section titled "How to Avoid Reading This Book." I was charmed when I discovered that that was precisely what the author meant. Nor did he indulge in silly jokes in "The Game of the Name." He told me what the normal pronunciation of T<sub>E</sub>X is, and accepted that pronunciation is best determined by usage, not fiat. As there were no tedious exercises, one did not have the feeling that vital information was being

concealed in the answer to an undone exercise. I liked the no-nonsense way that error messages were deciphered, both for T<sub>E</sub>X and L<sup>A</sup>T<sub>E</sub>X. Dr. Lamport seems to understand that clear, concise prose is most helpful to the person whose main concern is other than that of typesetting. His style is such that he is the only writer who could persuade me to read a paragraph of explanation for some of the more arcane areas in T<sub>E</sub>X.

### T<sub>E</sub>X for the Impatient by Abrahams, Berry and Hargreaves

Avoid Extremes; and shun the fault of such,  
Who still are pleas'd too little or too much.

There was not much time available to survey this book, but my overall impression is that this book is not radically different from many of the other books that I looked at. The layout of the book is rather dull and reinforces my notion of manual writers as being an overwhelmingly verbal lot. I was very surprised to read in the biography of Kathryn A. Hargreaves that she is interested in visual arts. Apart from her charming, but too infrequent illustrations, there is no evidence of a visual imagination in this manual. As in the other manuals, the volume of print to be read is enormous. The prose style, though turgid, was not as irritating as in some other manuals. There are a number of examples which are of great assistance. However, the authors have not gone the full distance and made a visual differentiation between the commands and the textual material to be printed. When I was skimming through the book, I felt that I might just as well have been using Knuth to whom they refer frequently for further explanation.

### Miscellaneous

Some foreign writers, some our own despise;

The five pages on T<sub>E</sub>X Basics, produced by Peter Flynn, were as useful to me as any of the manuals. An added bonus was that there was no "intellectual whimsy" to deal with. The command words were laid out clearly and the instructions were comprehensible. But for the fact that I needed a few extra commands, I need never have looked at a manual. I was also quite happy with the tone of *A Gentle Introduction to T<sub>E</sub>X* by Michael Doob, but there were exercises in it!

### Conclusion

A perfect Judge will read each work of Wit  
With the same spirit that its author writ:

I am not a perfect judge, and I have been very unkind about many of the manuals that I reviewed. Such criticism is foreign to my training as a remedial teacher where positive feedback is essential for a student in difficulties. I hope that your reaction to my criticism is not so negative that my requests for specific improvements are consigned to the dustbin. The consolation I offer is Pope's

Turn'd Critics next, and  
prov'd plain Fools at last.

You may apply that judgment to me.

My first request to the writers of computer manuals is that they would consider avoiding jokes at all costs. Possibly in the body of the text they might be permitted, but in the table of contents they are unforgivable. The earnest amateur will read that joke fifty times in a day and will end up detesting the perpetrator and all "eir" works and poms. The same applies to alliteration.

Secondly, I would ask that manual writers be more careful about the imagery used. There is something vaguely revolting about the idea of these tokens being read by the eyes, fed through the mouth, down the gullet, to the stomach, into the intestine and then being sicked up again on receiving a new set of instructions. Even more revolting is a consideration of the route after the tokens have reached the intestines.

The third request I have is for a reduction in the amount of print. Show me how, do not tell me how, in laborious detail. In this area, an increased use of graphics would be pleasant. It seems to me that the concentration on print has been so total that the visual appearance of the page has been forgotten. Not one of the books has any colour, no visual symbols have been used, there is not even some shading to indicate the difference between the commands and the textual matter.

Fourthly, I think it would be a good idea if writers decided beforehand whether they are writing a text book or a manual. A combination of the two satisfies neither market. The manual that has not yet been written is the one with a limited number of commands, attractively presented using colour and graphics, and with a severely limited amount of explanation. Such a manual would be adequate for those who have occasional need of the T<sub>E</sub>X programme and would give the potential T<sub>E</sub>Xnician sufficient confidence to buy another book.

Finally, I think that the most user-friendly approach that manual writers could adopt would be to include many more sample formats. These sample formats should show the computer commands on one side of the page and the end result on the other. Do not use these sample formats for T<sub>E</sub>X explanations as that makes them unclear. If the manual writer wanted to be really nice about the whole thing, she/he would choose a decent text to typeset. I would far rather read a Shakespearean sonnet over and over again than some piece of futuristic garbage written specifically to show the application of a simple command.

The question at the beginning of this paper was: How many of the manuals should be consigned to the lunar sphere to join the gnats' cages and the tomes of casuistry and the time of June, July and August? In relation to the manuals, I leave that decision to those more expert with computers than myself. In relation to the time, the sooner this paper is submitted, the lighter the load on the moon.