When I use emacs, if the file name ends with ".tex" then emacs puts me into tex-mode. One of the beauties of tex-mode is that when I type a double-quote character, either " or " is produced. Emacs seems to have some idea of which to use, though it's not always right.

What you *don't* want in regular text in LaTeX2e is to use the true double-quote character: ". It may look good as a right quote, but it won't look good as a left quote: Phil Rizzuto once said to me, "Holy cow, a baseball!"

I promised that I would talk about the four kinds of dashes. How about now?

Hyphen: Used for hyphenated words, like mother-in-law or fat-tree. Also used when a word has to be hyphenated at the end of a line, like Tim's original name for jefferson, that name being supercalifragilisticexpialidocious.

En-dash: An **en** is a typesetting unit corresponding to the width of a lowercase 'n'. To get an en-dash, whose width is an en, type two dashes in row, with no space between them: – . Use an en-dash for a range: a conference talk lasts 20–30 minutes; I was in grad school during the years 1984–1992; please read pages 55–72.

Em-dash: An **em** is the width of a lowercase 'm'. Type three dashes in a row (—) for an em-dash. An em-dash is punctuation that sets off part of a sentence. You can use em-dashes like parentheses or commas:

> I am—and I say this in all truthfulness—the best goaltender on the faculty at Dartmouth.

You can also use an em-dash like a colon:

> You're looking at the best goaltender on the faculty at Dartmouth—me!

Minus sign: Minus signs appear in math formulas, and so they appear only in math mode (which includes math displays). Note the difference between 7 - 4 and $7 - 4$.

One subtlety with dashes is that you typically should not put any space around them. That guideline does not apply to minus signs, since math mode ignores whitespace and figures out spacing on its own. But you shouldn't write mother - in - law, pages 55 – 72, or wingers — the orangutangs of the rink. There may be exceptions to this no-space-around-dashes guideline—which is why I call it a guideline rather than a rule—but I cannot think of any.

Space at the end of a sentence is a subtle issue. Notice how this sentence and the topic sentence of this paragraph run together. Now observe how this sentence has a little more space before it, so that you can pick out the individual sentences a little more easily. There's actually a command called `\frenchspacing` that suppresses the space at the end of a sentence. You can make a macro named `\freedomspacing` that expands to `\frenchspacing`. When you tire of `\frenchspacing`, you can hit the undo button with the command `\nonfrenchspacing` to return to good old 'Merkin spacing. See? Of course, you'll never use `\frenchspacing`, but it's good to know these obscure LaTeX2e things for your next cocktail party.

LaTeX2e (TeX actually) decides where a sentence ends as follows:

- All sentences end at a period, question mark, or exclamation point. (We'll abbreviate that as PQE.)
- If a PQE follows any character other than an uppercase letter, or if it follows any character other than an uppercase letter and that character is followed by a right parenthesis or right quote (single or double), then that PQE marks the end of a sentence.

- If a PQE follows an uppercase letter, then that PQE does not end a sentence. That's so P. D. Q. Bach comes out correctly, rather than P. D. Q. Bach.
- You can alter item 2 by putting an explicit space after the PQE. I like Lamport's example:

  Tinker et al. made the double play.
- You can alter item 3 by putting a backslash-at after the uppercase letter but before the PQE. Like I just did. Here's what happens if I don't put the backslash-at before the PQE. Not enough space!

How about them nonbreaking spaces? Lamport has some good examples, like Mr. Jones (here the non-breaking space also has the beneficial effect of telling TEX that "Mr." does not end the sentence), U. S. Grant (again, note the beneficial side effect), Figure 7, from 1 to 10, and (1) gnats.

But there are many other times that you should use nonbreaking spaces. If you are listing several short items with an "and" or "or" before the last one, put a nonbreaking space between the "and" or "or" and the last item. Too see why, take note that the consonants are b, c, d, f, g, h, j, k, l, m, n, p, q, r, s, t, v, w, x, y, and z. Without that nonbreaking space, that 'z' would look lonely.

I tend to avoid nonbreaking spaces before ranges. For example, I would type pages 55–72 rather than pages 55–72. The reason is that TEX might decide to break before the 72, and that would look really bad. If I *really* want the entire text "pages 55–72" on the same line, then I should use an `\mbox`: pages 55–72. There are some subtleties to using `\mbox` that we'll discuss later on.

Another place to put a nonbreaking space is between a mathematical "type" and a mathematical object. For example, you should not type something like "consider any Republican-loving, red-meat-eating, vertex v." Instead, type "vertex v." This rule (now it's a rule) holds even if the text in question does not end a sentence.

For years, I did not routinely type in the nonbreaking space in phrases like "vertex v" or "vertices u and v". I learned my lesson early in 1990 when we were dealing with line breaks in the first edition of CLR. There were a ton of bad line breaks that could have been avoided had I just put in the nonbreaking spaces in the first place. Ever since then, I have made it my business to just type in the nonbreaking spaces at the time I type in the text. It has become second nature to me.

It took me a long time to understand the nature of the comment in TEX. A `%` indicates that the rest of the line is a comment. But wait... there's more! All spaces at the beginning of the next line are ignored, too.

What about if the next line is totally blank? Does the entire blank line get

gobbled up so that the effect of the paragraph break is lost? No!! Now, the blank line above had no spaces; it was just a newline. Let's

try a line with spaces (the above line has two spaces). Still no change!