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a period or a comma immediately to the right of a quotation is "ugly". (As here: the editorial assistant would have changed that to "ugly." if I had let him.) From the point of view of the logical mathematician (and even more the mathematical logician) the decree makes no sense; the comma or period should come where the logic of the situation forces it to come. Thus,

He said: "The comma is ugly."

Here, clearly, the period belongs inside the quote; the two situations are different and no inelastic rule can apply to both.

Moral: there are books on "style" (which frequently means typographical conventions), but their mechanical application by editorial assistants can be harmful. If you want to be an author, you must be prepared to defend your style; go forearmed into the battle.

## 19. Stop

The battle against copyreaders is the author's last task, but it's not the one that most authors regard as the last. The subjectively last step comes just before; it is to finish the book itself—to stop writing. That's hard.

There is always something left undone, always either something more to say, or a better way to say something, or, at the very least, a disturbing vague sense that the perfect addition or improvement is just around the corner, and the dread that its omission would be everlasting cause for regret. Even as I write this, I regret that I did not include a paragraph or two on the relevance of euphony and prosody to mathematical exposition. Or, hold on a minute !, surely I cannot stop without a discourse on the proper naming of concepts (why "commutator" is good and "set of first category" is bad) and the proper way to baptize theorems (why "the closed graph theorem" is good and "the Cauchy-Buniakowski-Schwarz theorem" is bad). And what about that sermonette that I haven't been able to phrase satisfactorily about following a model. Choose someone, I was going to say, whose writing can touch you and teach you, and adapt and modify his style to fit your personality and your subject—surely I must get that said somehow.

There is no solution to this problem except the obvious one; the only way to stop is to be ruthless about it. You can postpone the agony a bit, and you should do so, by proofreading, by checking the computations, by letting the manuscript ripen, and then by reading the whole thing over in a gulp, but you won't want to stop any more then than before. When you've written everything you can think of, take a day or two to read over the manuscript quickly and to test it for the obvious major points that would first strike a stranger's eye. Is the mathematics good, is the exposition interesting, is the language clear, is the format pleasant and easy to read? Then proofread and check the computations; that's an obvious piece of advice, and no one needs to be told how to do it. "Ripening" is easy to explain but not always easy to do: it means to put the manuscript out of sight and try to forget it for a few months. When you have done all that, and then re-read the whole work from a rested point of view, you have done all you can. Don't wait and hope for one more result, and don't keep on polishing. Even if you do get that result or do remove that sharp corner, you'll only discover another mirage just ahead.

To sum it all up: begin at the beginning, go on till you come to the end, and then, with no further ado, stop.

# 20 The last word

I have come to the end of all the advice on mathematical writing that I can compress into one essay. The recommendations I have been making are based partly on what I do, more on what I regret not having done, and most on what I wish others had done for me. You may criticize what I've said on many grounds, but I ask that a comparison of my present advice with my past action not be one of them. Do, please, as I say, and not as I do, and you'll do better. Then rewrite this essay and tell the next generation how to do better still.

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