

## My Word

# On Learning to Write

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I learn from Bill Bryson in his fine “*A Short History of Everything*” that obscure scientific writing has a well-established history. Newton wrote impenetrably to keep tourists out; the geologist Hutton, with profound things to say, wrote obscurely, and to his detriment, because he was incapable of writing a coherent English sentence. Is there a third, perhaps more modern, category of obscurantism? Let’s face it: day by day molecular biology can be tedious stuff indeed. Surely there must be some better world — one in which we solve meta-problems rather than quotidian ones. The public (including us) wants what we might call a ‘leapfrogging’: there must be a way, or ways, to describe and deduce in general rather than in particular. In that breathless atmosphere, obscurity can be useful to the writer, ignored or encouraged by editors, embraced by administrators and deep pockets.

Lets put these dark thought aside. Most of us, I’ll assume, do want to write clearly, but how does one learn to do it? Our brains (some anyway) work in fits and starts — this reminds me of that, that reminds me of this, do you know the joke about Sam, and so on. But standard scientific writing won’t allow that to be transferred to the page. Some people think the problem must be tackled on a grand scale: the student is told to present and defend, in writing, an experimental plan to solve an outstanding problem outside his main area of interest. Wow — a job for JBS Haldane, but not for most of us. As a graduate student, I assisted in a course taught by Jim Watson at Harvard. One of Watson’s requirements was that each student write a three page paper on something, anything, related to the course. Oh what masterpieces of indirection were

produced! And what a valuable lesson it was.

There are some rules that help, I suppose: short sentences, the active voice, as few technical and compound words as possible, and so on. I used to write by hand, read (out loud) into a tape recorder, re-read the typed outcome, throw away, read a page of Nietzsche, and start again. But in my experience these rules and methods are only the starting point, and some rather more ‘interactive’ instruction is required. Watson applied the following method (at least to me): my finely honed draft was sailed back across the table accompanied by an eyebrow-push-up-grimace and the word: “Unreadable”. Reminds me of my all-time most memorable violin lesson. I walked into the home of the Russian virtuoso with whom I was studying and he said, deadpan: “I see you are smiling. Why are you smiling? If I played like you I wouldn’t smile.”

We call this the boulder-in-the-road teaching method, and it is not so uncommon in music, especially among the great Russians. A friend of mine tells me about her friend who went to study with Heifetz — yes, Jascha Heifetz. The first week he told Heifetz he would play the Sibelius Concerto, and JH said “We’ll see about that”. The student got through the first page before being sent home “to practice”. Upon repeated attempts he never got past the first page until, the last day, JH let him play the whole thing and then said: “It’s as I thought: you can’t play the Sibelius Concerto. Next.” Before being too harsh on Jascha, recall the story about Max Delbrück — the very Max I mentioned in my last communiqué [1]. It is said that Max returned a manuscript, torn to pieces, along with a note that said: “Please switch fields”.

Al Hershey didn’t bother to tear up my manuscript. I wrote a 20 page paper for him and got it back with most lines crossed out and the occasional phrase circled and marked “Good”. So I rewrote and rewrote and it came back with not a mark on the first page! Not a mark on the second! Then the third page: a line through the middle, a penciled-in “START HERE”, and

then most lines thereafter crossed out. Madame Auclair, the French violinist, had a gentler approach. Out of central casting, as they say: dark glasses, cigarette dangling, hoarse, accented voice. A friend went for a special violin lesson, and asked whether he might tape record this important event in his life. “Of course, my boy.” He played a bit and she said: “Very nice. There are some good things about your playing, very good. Now turn off the tape recorder”.

When I am struggling over yet another of my obscurely written drafts I sometimes recall: amateurs play music ‘in general’; professionals play each note. And so I present to a tough-minded friend one paragraph — just one — and when that is reported to be transparent I go on to the rest. But even if I have followed the rules I mentioned above, and even if that first paragraph seemed fine at the time, now, in view of what else I have written, that first paragraph might have to go, or be seriously recast. Each paragraph is an experiment — you might not know for some time whether it is any good.

There is a theme here, beautifully expressed by a friend who was going through the agonies of the “just the first paragraph” method in attempting to re-write a book. I hadn’t heard from him in a while and began to worry — had I been too tough? — and he wrote: “The only reason I hadn’t sent it (the new paragraph) already is that I didn’t want to disappoint you. But I realize that the only way you can help me is if I continue to disappoint you. So here it is...” All my teachers, whatever their methods, were trying to help me, and I love them for it. Heifetz I wouldn’t be so sure about. Rules are one thing, but in the end communication is all: at the end of a pleasant interview with a fine scientist of foreign extraction she shook my hand and said: “Its been a pleasure talking to me”.

### References.

1. Ptashne, M. (2007), On speaking, writing and inspiration. *Curr. Biol.* May 15th issue.

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