## The future's so bright, I gotta wear shades (1991)

Nonetheless in a episode of terminal desperation in the late Eighties, I made fresh graduate applications. One was to the department of computer science at Colorado. They called me in for an interview, explained they would admit me if I actually took a couple of courses in the subject — this of course I had never done — I pleaded poverty — they said they'd get me a job — I said all right, what, where — they gave me a list of places where I'd already been applying unsuccessfully since the early Seventies — I smote myself on the forehead — Lucy snatches the football away, Charlie Brown falls on his face once again

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Pause for three years while I try to find money for tuition. Finally in the Spring of 1991 I score a loan and register for the most advanced course in the department, figuring I have one semester to write a thesis and I had better find out what the most famous member of the faculty is doing. In a complete departure from precedent, I attend nearly every class and read all of Famous Professor's papers. I am seriously out of practice, and feel like my talent has atrophied while I was wasting away in blue-collar-job underemployment. Nonetheless I catch on and figure out a new way to prove the central theorem of the subject. — Then (weird but true) midway through the semester Famous Professor has a heart attack and is confined to the hospital. Since this is an advanced seminar, we all stare at one another blankly trying to decide what to do. The consensus, finally, which I strongly promote since I have no other option, is to carry on with the course while we await Famous Professor's return. Hence the class turns into a discussion group in which on more than one occasion I myself lecture. Finally even though some other guys had been working on it I run out of other questions to resolve and attack the problem of designing an algorithm to sort Famous Professor's abstract structures into a canonical form. A bad solution of this problem, an algorithm that runs as n^4, has already been the subject of a doctoral thesis, but

it turns out I can do better than this with my first guess, no worse than n^3, and have an argument that shows one running as n^2 must exist, so I concentrate on refining it; particularly after the Other Guys come up with their own cubic solution, present it to Famous Professor, and are praised lavishly for proving something I have already dismissed as a triviality.

And, curiously enough though the Other Guys have actually taken courses in algorithm design, have the advice and support of the rest of the departmental faculty, etc., nonetheless I working by myself in a field I have just entered a few weeks earlier manage to come up with an answer none of them believed existed. I have tried previously to explain why it should exist but, of course, these are computer geeks with severe intellectual limitations, they are very poor at dealing with abstractions, and nobody can understand what I am saying. I outline the final solution in a lecture just before Spring Break. When classes recommence two weeks later I discover that Other Guys have taken what I suggested, added enough input from other faculty that they could claim the idea was their own, and visited Famous Professor in the hospital with the solution, which he has applauded as a work of genius. My name of course has not been mentioned. Hmmm.....

Other members of class explain this turn of events with downcast eyes. Famous Professor returns and recommences lectures, prefacing them with extravagant praise of Other Guys. Gnashing my teeth, I ponder how to broach the issue. What can I say to him?

Indeed, what is the real problem here? Anthropologist that I am, it is easy to understand. It isn't that I seem that much older than the other people in the class, but that I look and smell funny — independent, an Outsider. I think for myself, I have my own ideas, I don't behave like anybody's pack mule. Famous Professor teaches

"computer science" but is not himself a programmer, he is a mathematician, not the usual idiot savant, so what he needs in a student, obviously, is somebody who will attend to his wishes, solve only the problems he needs solved, write code for him, and if necessary pick up his drycleaning. He wants a servant. Of the Other Guys, one fits this description perfectly, and has clearly, in the mind of Famous Professor, been identified as the designated Prize Pupil, exactly the student/domestic servant he requires. I look like some alien intruder to him, so when I talk — never mind that this is the scientific world which isn't supposed to work this way — he simply doesn't pay attention, because I am not what he wants to see. — As for the behavior of the Other Guys, why should that astonish me? — "I went to Caltech," I explain to somebody when I am bitching about the affair. "I've seen what people will do to suck up to Richard Feynman. The only surprise is that they behave as badly in the Little Leagues." 3

So, I write it off. I have to, since the whole point of this exercise is to make an impression. I schedule a meeting with Famous Professor. I carry in a list of twenty questions I have about his research. He answers them with increasing difficulty. Toward the end I start to take it easy on him because he is obviously still weak and laboring to keep up. When I suggest, ever so discreetly, that I solved the algorithmic problem he thought was so important, he doesn't understand what I am talking about. — No surprise there. — However I have another trick up my sleeve. That was just one of the things I was working on, the main idea I have is a generalization of his work to higher

<sup>&</sup>lt;sup>1</sup> With this specific example in mind Feynman once remarked that anything that had to *say* it was a science probably wasn't. "Computer science", properly, is in part a branch of engineering, in part a pre-existing branch of mathematics (the theory of computation). The theory of computation is of course deep and difficult; computer engineering, on the other hand, though hardly trivial in practice is trivial in principle, a mile wide and an inch deep, which is why 14-year-olds can master it.

<sup>&</sup>lt;sup>2</sup> Cf. the character of Kent in Real Genius [Martha Coolidge, 1985].

<sup>&</sup>lt;sup>3</sup> Foolish of me to have been surprised; it should have been obvious such behavior was scale-invariant.

dimension. He seems to get this part. I explain that I have worked out a lot of it, but there is still (hint, hint) more to be done. The colloquy ends on an ambiguous note.

And shortly so too does the semester, after which roughly thirty seconds elapse before I have to go back to work, since I am two months behind on every significant bill and cannot survive any longer without money. I consider writing up my solution, but face three difficulties: first, the paper will have to go to the journal *Theoretical* Computer Science, where the only publications on this subject have appeared, and it is dead certainty that Famous Professor will be enlisted as referee. So anything I write will be put on hold until his favorites get their own paper published, and probably even afterward. - Second, as soon as I realize I've been suckered once again into wasting my energies on somebody else's problems, I am absolutely furious, and cease to give a shit one way or the other about the subject.<sup>4</sup> — Because what was the point of this exercise? only this: to make a good impression on Famous Professor, who could bestow upon me a doctorate. But manifestly this is impossible, for reasons which have absolutely nothing to do with mathematics or "computer science" or my own merits and abilities.

Anyway, third, I simply don't have the time or energy: see the unfinished screenplay, above.

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A year or so later I am walking my dogs up the hill to the mountain park one afternoon after I have awakened from the sleep of absolute exhaustion, and encounter Prize Pupil. With great enthusiasm he describes to me the contents of his dissertation, which turns out to be exactly what I had described to Famous Professor in our tête-à-tête.

<sup>&</sup>lt;sup>4</sup> And forget everything almost immediately. There are garbled notes buried in a backpack somewhere, but basically if you were to ask me now (or indeed a month or two afterward) what these structures were, or what results I proved or how, I wouldn't be able to tell you.

Conclusion: I got ripped off not only by his students, but by Famous Professor himself. Once again I realize it's probably just as well Nozick never read that letter.

[...]

Much later — after I had myself become the homeless academic — by virtue (of course) of knowing the right guy (a starving professor at a for-profit university who moonlighted taking courses for other people's students — behold the future of higher education), I became not simply a ghostwriter of term papers but an online body double for rich Arab foreign students who couldn't pass their mathematics courses themselves. — Which paid shit, as it turned out — tutors are servants — but (literal) beggars can't be choosers.

I'm still waiting for Rosanna, though.