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The Rabbit and the Lion

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The Rabbit and the Lion

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1. GENEALOGY

I would like to start by saying how much we all appreciate the work that Vicky and her colleagues have done in order to give us the opportunity to celebrate Ron Webbink's birthday. I am sure that everyone knows that Ron was Vicky's supervisor.

A couple of weeks ago, I was made aware of a website that is called 'The Mathematics Genealogy Project' [1]. It is something like a family tree, except that it gives student/supervisor connections instead of children/parent connections. I had been alerted by someone that I was descended from Gauss, and was rather proud of this until I discovered that almost everyone is descended from Gauss.

However I have some information that I could have entered into the website, except that I didn't want to embarrass Vicky. I am sure she knows that she is the great-grandchild of Fred Hoyle, but does she know that she is also Fred's grandchild? Oh dear, it sounds like something a bit incestuous.

When Ron first came to Cambridge, he was supervised by Fred for a year. But then, the Vietnam war being near its height, Ron volunteered for the navy and spent four years there. When he came back, I was very pleased to have him join me, instead of continuing with Fred. Since Fred was my supervisor some ten years earlier, this possibly sordid tale is in fact quite easily resolved.

2. WEBBINK 1984

I'd like to continue by quoting something that Gijs Nelemans sent me. He was referring to the paper of Webbink in 1984 [2]. He says 'This is the most amazing paper I know. Only 6 pages, but unbelievably rich in content and concepts. Everybody in the audience should read it (again)!'.

'Best known I guess for the concept of CO WD mergers as progenitors of type Ia SN, and of course the "Webbink" formulation of common-envelope calculations. But also the concept of He + CO WDs as R CrB star progenitors, and He + He mergers as sdO stars (although we now more think sdB). Furthermore, I believe it is the first to suggest close double WDs as strong GW sources and is the basis of the Hills et al. GW paper of 1990 [3]; it gives the details of calculating the stability of mass transfer between double WDs, and in passing also mentions the direct impact phase of mass transfer!'.

'The only problem with the paper is the fact that you crammed information worth at least 6 figures into only 2! They have become close to incomprehensible for any normal human being. So let this be a lesson for students: strive to write papers like this one, but make proper figures!'

3. A SUPERVISOR YOU CAN TRUST

Since we are in Greece, I think it would be appropriate to continue with a fable attributed to Aesop. A rabbit was sitting in the forest, thumping away on a word processor. A fox saw him and asked what he was doing. The rabbit said 'I'm writing my PhD thesis'. 'What's it about?' said the fox. The rabbit scrolled up to the top and pointed to the title: 'How rabbits kill foxes'. The fox said 'That's ridiculous; tell me how, and then I'll eat you.' The rabbit said 'I'll do better — I'll show you the video. It's set up in this cave over here.' He led the fox into the cave. A few minutes later the rabbit emerged, but not the fox.



Some time later, a weasel went by. He watched the rabbit, and asked him what he was doing. The rabbit said 'I'm writing my PhD thesis'. 'What's it about?' said the weasel. The rabbit scrolled up to the top, did some cut-and-pasting, and pointed to the new title: 'How rabbits kill weasels'. The weasel said 'That's ridiculous; tell me how, and then I'll eat you.' The rabbit said 'I'll do better — I'll show you the video. It's set up in this cave over here.' The rabbit led the weasel into the cave. A few minutes later, only the rabbit emerged.

A wise old owl was watching from a tree. He said to the rabbit, 'I'm not going to eat you, but I'd really like to know how you do that.' The rabbit said, 'Why don't you look in the cave? But go very carefully'. The owl crept into the cave. Near the back was a mountain lion, surrounded by heaps of bones.

The moral of the story is: It doesn't matter what title you give your thesis, as long as you've got a supervisor you can trust.

I'm sure we will all agree that Vicky had a supervisor she could trust.

REFERENCES

1. The Mathematics Genealogy Project (2010), URL <http://www.genealogy.ams.org>.
2. R. F. Webbink, *ApJ* **277**, 355–360 (1984).
3. D. Hils, P. L. Bender, and R. F. Webbink, *ApJ* **360**, 75–94 (1990).

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