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Laudatio for
Ivor Grattan-Guinness

Op 9 mei hield in Groningen Ivor Grattan-Guinness de Bernoullilezing 2000. Zijn collega Jan van Maanen sprak de laudatio uit. Hieronder volgt de tekst van de laudatio, de Bernoullilezing is afgedrukt op de pagina´s daarna.

In the documents that I consulted about the life of Ivor Grattan-Guinness his life started when he was an undergraduate at Oxford. Since this is quite different from ordinary human beings, whose lives generally start with birth, I want to carry this observation a bit further, and sketch some of the possible explanations:

1. I have not looked carefully, since otherwise I would have found that Grattan-Guinness was born on the same day in 1941 as the Germans started to invade Russia (23rd June).

2. I have looked carefully, but Grattan-Guinness has indeed hidden the data about his birth since he thinks that these are irrelevant.

3. But with extraordinary people we must consider the case that something *Paranormal* happened. Say, in Oxford in the end of the fifties "They saw a great light", and from nothing there he was, Ivor Grattan-Guinness, the new undergraduate, not born but yet studying for his bachelors of arts in mathematics.

I pay some special attention to the third possibility since it connects to the book [1] that Grattan-Guinness edited when the Society for Psychical Research celebrated its first centenary. The book gives a full survey of the critical investigations of paranormal phenomena, such as *Out-of-the-body experiences, Clairvoyance, Poltergeists, Precognition* and many

more. Grattan-Guinness contributed articles about *Coincidence* and *Ufology*. Maybe sudden *Apparitions in Oxford* could have been another case for this quite interesting book.

From the Oxford period onwards we are on safer ground when the biography is concerned. In [5] Grattan-Guinness reveals how he 'spiralled' into the history of mathematics: in Oxford mathematics was taught in a too 'perfect' manner, and questions where these theories came from and what was the motivation for them were left unanswered. A short job in the defence industry led to new questions and doubts, which made Grattan-Guinness decide to change to post-graduate studies in the history of science, next to a part-time teaching position. For this he went to the London School of Economics, where Karl Popper taught and where he obtained a masters degree in mathematical logic and the

philosophy of mathematics (1966), followed by a M.A. in mathematics at Oxford (1967), and then a PhD and the higher doctorate in the history of science at the University of London (in 1969 and 1978 respectively).

Currently Grattan-Guinness is professor of the history of mathematics and logic at Middlesex University. Groningen students have profited from his teaching in an Erasmus course, some years ago, and a series of research students obtained outstanding doctorates during the past decade.

Product of amount and quality

Enough biography now. Let me turn to Grattan-Guinness's work. I shall first give an overview and point at some common aspects, in order to then answer the question what makes Grattan-Guinness one of the leading scholars among his fellow historians of mathematics, which is — after all — the reason for inviting him for the Bernoulli lecture.

What amazes is the size of his scientific production. Grattan-Guinness has treated a variety of subjects, from the fields that were central when he was a student (logic and the philosophy of mathematics, and applied mathematics) to broad general and encyclopaedic studies, from studies about individual mathematicians (such as Fourier, Russell and Laplace) to the discussion of philosophical questions, but also eccentric subjects that one would maybe not expect, such as numerology in the music of Mozart and Beethoven, and the research of paranormal phenomena, mentioned earlier.

Not only the range of subjects is impressive, also the volume of the output is enormous. Grattan-Guinness has published 11 books, and the 12th (about the history of the foundations of mathematics [6]) is forthcoming. Six of these 12 books were written individually, two he wrote with co-authors, and the other four are edited volumes. Next to this he wrote over 125 refereed solo papers, in which I have not counted encyclopaedia articles, obituaries, book reviews, editions of works of others, bibliographical publications and conference reports.

This is the easy bit of the survey, the visiting committee bit, the bookkeeping bit. Now about the quality of the work: why is it special? I shall highlight some features which, in my view, are characteristic for much what Grattan-Guinness has written, and which distinguish his work in a positive manner.

Independence of problem definition and of judgement. In the bottom line of an email a student recently wrote (I keep the spelling mistake for the sake of authenticity, and guess that this bottom line itself was copied from an email he received from someone else):

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Historie does not repeat itself;
historians merely repeat each other.
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This certainly does not apply to Grattan-Guinness. Although his method is very classical (start with a relevant question, study the sources and write a sensible story, based on the sources) his definition of the problems, his choice of the sources and his stories and judgements are always independent of the daily trends, and sometimes controversial. I shall illustrate this with a brief look into his recent *history of the mathematical sciences* [4].Many histories of mathematics appeared in the course of the 20th century. And without exception one third of the average book about the history of mathematics is about things that happened B.C.: Egyptian, Mesopotamian and Greek mathematics, sometimes a little prehistory and a bit of Chinese. Not so Grattan-Guinness's *Rainbow*. In his book the era B.C. takes 86 of 817 pages, so slightly over 10%. The argument is that "mathematics since 1800 usually makes more contact with the modern mathematician or student", and that good books in which the early period is well represented already exist. Another aspect of Grattan-Guinness's general history is that he also pays attention to the *'lesser figures'* as opposed to the major mathematicians, no 'Great Man' approach therefore. The same deviation from the main track of general histories can be seen in the greater attention to applications, to probability and statistics, and to national styles and differences. And, differently from several other authors, Grattan-Guinness does not confine his sources to those available in English language. He is a very international scholar, as also his work on the 18th century mathematics for the history of science project of the *Enciclopedia Italiana* shows.

Completeness and precision. A book which deals with one discipline in one country over a period of 40 years must be fairly complete when it counts 1602 pages, I aim at Grattan-Guinness's 1990 study of French mathematics shortly after the French revolution [2]. Just a few observations about this book. It does not want to present one neatly converging story, for "instead of a unity of purpose we have here plurality, plurality, plurality." Developments in physics enter the scene, politics is extremely important, various institutions employ and challenge the mathematicians, and, not to be forgotten, the individual mathematicians ask for attention: where and when were they born and educated, how was there career, what new mathematics did they contribute, where and when did they die? The result is a multifocal story. All questions are discussed and related with each other. Some of the sections are topical histories in their own right (for the history of celestial mechanics, for example, or elasticity theory).

One of the strong points in many of Grattan-Guinness's works can very well be recognised in this book: his wish to provide the reader with clear and compact, well demarcated information about very specific subjects, often with references for further detailed study. This can best be done in tables. There are many of these, throughout the book, but especially in the second half of Vol. 3. I want to highlight one table in particular, in which Grattan-Guinness gives insight in the Paris scientific circles. It is placed at the end of Chapter 2, and consists of a map of the central part of Paris with a table about the addresses of the key institutions and the major scientists completed with the period in which they lived there. Legendre is the winner in moving around. So many facilities and capable people in such a small area, one of the factors that contributed to the rise of science in France. Completeness and precision, and the wish to provide the reader with much direct evidence.

It would not be difficult and maybe it would have been more appropriate to illustrate these aspects of completeness and precision with the *encyclopaedia of the history and philosophy of the mathematical sciences* [3]. I shall not do that here but do return to this work below.

Humour. I hope that the audience will have the opportunity to decide about this point through the Bernoulli lecture.

Appraisal

I shall now not say more about the author Grattan-Guinness, but am sure that I am not complete when I do not say some words about the fellow historian, this time with the emphasis on fellow. For Ivor is not only a scholar sitting on his desk and writing a new book (although I know that he can do this to a level which is not always healthy), he is also a kind and enthusiastic colleague. A real network-

er, giving lectures around the world, working hard for journals, one of which he founded and edited for many years [7], participating in professional societies and committees, contributing to large projects.

I remember how he persuaded me to write for his *encyclopaedia* although I had not attended the first briefing. He combined a supportive tone ('of course you can do this') with a cheerful kind of pressure. I also remember long walks in Oberwolfach, and musical evenings with Edid Grattan-Guinness playing the grand piano, and Ivor singing.

Thanks Ivor, on behalf of myself, on behalf of the community of historians of mathematics. Thanks also for the honour of coming to Groningen for giving the Bernoulli lecture.

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References

1   Grattan-Guinness, I. (ed.), *Psychical research. A guide to its history, principles and practices*, Wellingborough: The Aquarian Press, 1982.

2   —, *Convolutions in French mathematics, 1800-1840. From the calculus and mechanics to mathematical analysis and mathematical physics*, Basel/Boston/Berlin: Birkhäuser Verlag, 1990, 3 volumes.

3   — (ed.), *Companion encyclopaedia of the history and philosophy of the mathematical sciences*, London: Routledge, 1994, 2 volumes.

4   —, *The Fontana history of mathematical sciences. The rainbow of mathematics*, Hammersmith, London: Fontana Press, 1997.

5   —, 'Cannot put it down: spiralling into the history of mathematics', *Newsletter of the British Society for the History of Mathematics* 40 (Autumn 1999), 29–35 .

6   —, *The search for mathematical roots, 1870-1940. Logics, set theories and the foundations of mathematics from Cantor through Russell to Gödel*, Princeton: Princeton University Press, to appear.

7   *History and philosophy of logic*, journal founded (1979) and edited (until 1992) by Ivor Grattan-Guinness.