

SIMON: THE GENIUS IN MY BASEMENT

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This is the title of an unconventional biography of Simon Norton, occasional Word Ways contributor, written by Alexander Masters, a tenant in a rooming-house owned by Norton who lives in the basement. (The book was published by Delacorte Press in 2011 and sells for \$25.) Few Word Ways subscribers know that Norton, now sixty years old, was a mathematical prodigy (with an IQ of 178) who won several International Mathematical Olympiads before becoming a professor at Cambridge University. There he collaborated with John Conway and others to compile the *Atlas of Finite Groups*, a treatise documenting the large number of algebraic groups not containing subgroups (building blocks analogous to the table of elements in Chemistry, or primes in Number Theory). Later, he helped elucidate the properties of the so-called “Monster”, a group of colossal size that requires at least 196,883 dimensions to describe. Since 1985 he has largely abandoned higher mathematics in favor of a crusade to reverse the decline of train and bus service in Great Britain, riding about-to-be-discontinued lines and donating £10,000 each year to the Sheila McKechnie Foundation for an award for “transport activism”.

This biography has an unusual feature. Not only did Masters extensively interview Norton and his associates, but he allowed Norton to read and critique drafts of each chapter.

There are a few hints in the biography that Norton has long been interested in wordplay: (1) a crossword grid constructed at the age of four, incorporating only number-names ONE, TWO, THREE... (page 54); (2) the minimum number of London Underground stations one must traverse to exhaust the alphabet (14), reminiscent of pangrammatic highway studies in Word Ways (page 96); (3) apposite anagrams of names of Cambridge University colleagues, such as “earthly dimension” and “Lenin made history” for mathematician Miles Anthony Reid who had recently visited the USSR (page 287); (4) alphanetically substituting integers for letters in SIMON and NORTON and looking for messages in the sum, coming up with ?A?HINT (page 126). (Computers can nowadays generate zillions of solutions to this problem, a few of which will likely be a word or phrase.)

Norton first subscribed to Word Ways in 2001. He has contributed three articles:

Word Groups (Feb 2005) Norton used algebraic group theory to show that addition and subtraction of number-names can be used to generate 23 letters of the alphabet (no J,K,Z) *without rearrangement*: EIGHTY – EIGHT = Y, SIXTY – SIX – Y = T. etc. Using the individual letters, one can then construct any word not containing J,K,Z.

Properties of Sequences (Feb 2009) If one replaces the Fibonacci sequence 1,2,3,5,8,13,21... with A,B,C,E,H,M,U... reducing higher integers mod 26, a large number of curious numerical properties result, all of which can be explained by higher mathematics.

Scrabble and Retrograde Analysis (May 2011) What is the smallest word grid that cannot be achieved by Scrabble-legal moves?

Under Further Reading, Masters has the last word: “Simon also contributes occasional letters...to the *Independent*, the *Guardian*, the *Camden New Journal* and *Wordways*, a magazine of recreational linguistics.”