

## Geoffrey Marnell: *Mathematical Doodlings - Curiosities, conjectures and challenges*

Book review by Thomas Britz<sup>1</sup>

In the past week, I had the rare pleasure of reading two short non-fictional books on mathematics. The first, *Tal* (Reflections 47, Aarhus Universitetsforlag, Denmark, 2017. ISBN 978 87 7124 502 8) by Henrik Kragh Sørensen, was a wealth of erudite insight to the history of numbers and mathematics, distilled into a very accessible and frequently hilarious work of knowledge dissemination addressed at the Danish general public. The general public (and I) enjoyed this slim book as well as the subsequent public lectures and radio interviews by the author. A short dramatic play was inspired by the book and performed to critical acclaim.

In contrast, the book under review, *Mathematical Doodlings - Curiosities, conjectures and challenges* (Burdock Books, Australia, 2017. ISBN 978 09 9436 669 6, available from most major online bookshops) is a personal and passionate affair, providing ground perhaps more fertile for sowing seeds of a play. Most of the book forms an ode to numbers and their patterns, a lifelong love affair that the author has enjoyed as non-professional mathematical doodler and thinker.

The author enthusiastically shows off the object of his love, number patterns. First, the author shows how to find mathematically describable patterns from any written sequence of numbers. Next, the author presents a collection of interesting and fun patterns that arise from repeated iterations of numbers, often as from a magic trick. Finally, the author presents putative prime-number patterns, including several of his own variations of Goldbach's Conjecture. In the lengthy set of Appendices - more than a quarter of the book - some quirky but possibly useful sections are given, such as a list of the first 1000 primes, and an exceedingly detailed user guide to performing numerical procedures with Microsoft Excel.

It is an intimate display of author's object of affection, and on the whole, I found myself falling in love with these patterns too.

Love is not the only emotion in this love affair of a book. The introduction defiantly defends the author's right to court numbers, as amateur doodler and, the author seems to fear, as less worthy suitor than professional mathematicians in their ivory towers with their proper proofs. The author points to the origin of this angry defensiveness, an IQ test taken as a child, and spends thirty pages railing against such tests. Another almost thirty pages support this attack which, in total, flavours almost a third of the book's pages. The arguments put forth are often good but the discussion as a whole seems outdated, as if the author is obsessed and arguing in an otherwise empty room long after every other guest has left the party.

---

<sup>1</sup>Thomas Britz is Senior Lecturer at the School of Mathematics and Editor of *Parabola*.

As a whole, this book of curiosities is itself curious, forming an unusual and uneven pattern of contents. The quality of writing is uneven too: it is well written but is sometimes repetitive, prolonged, and stale. IQ test rants and Excel user guides are unfortunately not timeless, unlike the lovely number patterns presented.

It would be nice to hope that it is not necessary to excuse one's love of numbers, even as an amateur doodler, but for those who might identify with such emotions, this book may bolster one's courage to pursue this love. For everyone else, the book may also be of interest, not only for the mathematical curiosities within, but also for its rare and interesting display of passion for numbers.