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NumenRology: A Poetic Exploration of the Lives and Work of Famous Mathematicians

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Ode to Alan Turing

Unfamiliar smells of coriander, turmeric, cinnamon
what they brought back from that dark place,
what they left you to face, alone
with only numbers,
what counted, only numbers could decide

"Whether to move to the left, move to the right, or stay in place."

proof or falsity,
statements of love or hate.
What tables of behaviour, symbols, squares
lights in front of eyes closed tight behind tight fists.

"In order for an animated machine to compute the world
you need real numbers in binary form."

Someone has to make a decision procedure
oh oh oh one one one oh one oh one
dot oh one dot oh oh one one

Oh Cambridge prestige and diction
Oh Princeton money, Oh mock Goths,
Oh slippery climb up the tower
Oh Dot Dot Oh

One war, one woman, one Enigma
the probability of failing her, of falling
through the cracks, of cracking the code.

Hide the Queen's medal in a toolbox. Move to the next square.

Oh computable numbers, your subjects and predicates
their sequence of symbols, machine sung:

DADDCRDAA; DAADDRDAAA; DAAADDCCRDAAAA; DAAAADDRDA;

No general process for determining whether a given father
is satisfactory or not.

"The behaviour of the computer at any moment is determined by the symbols which **he** is observing,
and **his** "state of mind" at that moment."

Certain codes and mannerisms
immediately recognizable,
the flick of wrist
inflection of voice
turn of head
colour of scarf
cut of suit.

"The state of mind of the computer corresponds to an m-configuration."

M for machine, m for mother, m for man–
the room scanned
glance exchanged
meeting arranged

compatible numbers converge computably
mutable, mutual programming
a condition of functions and definitions.

"Turing believes that machines think.
Turing lies with men.
Therefore machines do not think."

Suppose a cog in the wheel, a
tape in the machine, a bug
on the wall.
Suppose his strong hands, dark hair
thick vowels, hard thighs.
Suppose mutual compatible increasing continuous
satisfying sighs.

Suppose someone is listening.

The text in sans-serif font is from Turing's "*On Computable Numbers, with an Application to the Entscheidungsproblem*".

On Euclid's Book VII – Elementary Number Theory
Proposition 8

If a [daughter][α] be the same parts of a [mother] that a daughter subtracted is of a mother subtracted, the remainder will also be the same parts of the remainder that the whole is of the whole.

Only if the same parts
numbed and subtracted,
a remainder fondled not fondly
a daughter subtracted from
a mother abstracted

    a remainder, fending.

Only a fraction, a decimal
half mooned, half sister
half life
somewhere
someone
else.

        Maybe something will come up.

A (re)mind[her]

Does she look like him/me?
What secret folds of history
pieces of pocket fluff
remainders of the whole
that is not whole

    but a hole
a number subtracted from a number subtracted
one minus one equals
nothing
    left
to give her/us, just
reminders of nothing,
holes in the whole.

[α] Where the words [daughter] and [mother] replace Euclid's word [number].

On Diophantus' Arithmetica

A "wanting" and a "wanting" yields a forthcoming.
A "forthcoming" and a "wanting" yields a wanting.[δ]

and did I tell you over the brim of it all
and the words welling and sucked back
under the undertow of wanting to yield
all needing under your kneading hands

and the words welling and sucked back
and forth and finally returning to source
stream-head bubbling a fissure forceful
wanting your hands there forthcoming

under the undertow of wanting to yield
and fall forward running toward your
words outstretched and spilt forth over
the edge of this forthcoming yielding

under your kneading hands all thoughts
full of words unsaid re-verbed undone
this pounding ribbed throbbing wanting
and did I tell you over the brim of it all

[δ] Where positive terms represent a "forthcoming" and negative terms a "wanting."

Postscript

I have been writing science-inspired poetry for over two decades, but recently, I realized that my interest in science really came out of an aptitude for mathematics. Ever since I was a child I have been fascinated with shapes, patterns and numbers. My grandfather would play chess and checkers with me. Old phone numbers, addresses, and even credit card numbers clutter my memory. In high school I was on contract for all of my math courses; I did the work on my own and checked into class once a week. In the resulting spare time I explored the library.

Nearly four decades later, I began reading Stephen Hawking's *God Created the Integers*. His book, and many of the science articles I have written, triggered a new manuscript of poetry, *Numen^{R}ology*. These poems not only explore my interest in mathematics, but also some of the obstacles that prevented me from pursuing a career in science, and why the poet emerged instead.

In the end, language and humanities called the loudest. As a first-year undergrad I studied ancient Greek because I had the romantic notion of becoming an Egyptologist. I was enthralled with the lives of Hatshepsut, Cleopatra and other powerful female figures from ancient history. Reading Hawking's book all these years later, I discovered the life and work of Hypatia – mentioned in a footnote. One section of the manuscript pays tribute to her life, work and death in an heroic crown of sonnets.

The ancient Greeks, particularly Neo-Platonists like Hypatia, believed that the way to the divine "One" was through contemplation, abstraction and higher thought, of which mathematics was the pinnacle. Indeed, to me mathematics has always had a numinous quality. After Hypatia, I went on to explore the life and work of other great mathematicians – Euclid, Diophantus, René Thom, Alan Turing, and others.

In reading translations of Euclid all these years later, I was fascinated to realize that the ancient Greeks invented geometry without algebraic notation; they used text to describe what they worked out on slates or diagrams in the sand. In two poems included in this except, I similarly use text to "translate" mathematical propositions by substituting words in the theorem with another familiar word and then building a poem around the mutated proposition.

On submission of the manuscript I was invited to attend the Banff International Research Station for Mathematical Innovation and Discovery (BIRS) workshop on "Creative Writing in Mathematics and Science" in May 2010. I am grateful to all my workshop colleagues for their expert advice and warm encouragement. The exploration continues. – *Mari-Lou Rowley*