

# Claude Elwood Shannon: A Genius of Many Talents

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# Claude Elwood Shannon

Shannon once said that

*“financial value, or value to the world,” never motivated him and that he had “spent lots of time on totally useless problems.”*

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I have come to two conclusions recently:

- 1) I am a better poet than scientist.
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You may disagree with both of these, but I enclose "A Rubric on Rubik Cubics" for you.

Sincerely,

Claude E. Shannon

P.S. I am still working on the juggling paper.

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- Shannon's poem was originally published in a slightly amended form in 1985 by David Singmaster in the magazine Cubic Circular.
- As Shannon wrote, the poem can be read "or sung to 'Ta! Ra! Ra! Boom De Ay!' with an eight-bar chorus."

# A Rubric on Rubik Cubics<sup>(1)</sup>

Strange imports come from Hungary:  
Count Dracula, and ZsaZsa G.,

Now Erno Rubik's Magic Cube  
For Ph.D. or country rube.

This fiendish clever engineer  
Entrapped the music of the sphere.

It's sphere on sphere in all 3D—  
A kinematic symphony!

Ta! Ra! Ra! Boom De Ay!  
One thousand bucks a day.  
That's Rubik's cubic pay.  
He drives a Chevrolet.<sup>(2)</sup>

# A Rubric on Rubik Cubics

Forty-three quintillion plus<sup>(3)</sup>  
Problems Rubik posed for us.

Numbers of this awesome kind  
Boggle even Sagan's mind.<sup>(4)</sup>

Out with sex and violence,  
In with calm intelligence.

Kubrick's "Clockwork Orange" - no!  
Rubik's Magic Cube-Jawohl!

Ta! Ra! Ra! Boom De Ay!  
Cu-bies in disarray?  
First twist them that-a-way,  
Then turn them this-a-way.

# A Rubric on Rubik Cubics

Respect your cube and keep it clean.

Lube your cube with Vaseline.

Beware the dreaded cubist's thumb,  
The callused hand and fingers numb.<sup>(5)</sup>

No borrower nor lender be.  
Rude folk might switch two tabs on thee,

The most unkindest switch of all,  
Into insolubility.<sup>(6)</sup>

In-sol-u-bility.  
The cruelest place to be.<sup>(7)</sup>

However you persist  
Solutions don't exist.

# A Rubric on Rubik Cubics

Cubemeisters follow Rubik's camp—  
There's Buhler, Guy and Berlekamp;  
John Conway leads a Cambridge pack  
And solves the cube behind his back.<sup>(8)</sup>

All hail Dame Kathleen Ollerenshaw,  
A mayor with fast cubic draw.

Now Dave Singmaster wrote THE BOOK. <sup>(9)</sup>  
One more we must not overlook—

Singmaster's office-mate!  
Programming potentate!  
Alg'rithmic heavyweight!  
Morwen B. Thistlethwaite!

# A Rubric on Rubik Cubics

Rubik's groupies know their groups:  
(That's math, not rock, you nincompoops.)

Their squares and slices, tri-twist loops,  
Plus mono-swaps and supergroups.

Now supergroups have smaller groups  
Upon their backs to bite 'em,

And smaller groups have smaller still,  
Almost ad infinitum.

How many moves to solve?  
How many sides revolve?

Fifty two for Thistlethwaite.  
Even God needs ten and eight. <sup>(10)</sup>

# A Rubric on Rubik Cubics

The issue's joined in steely grip:  
Man's mind against computer chip,  
With theorems wrought by Conway's eight  
'Gainst programs writ by Thistlethwait.  
Can multibillion-neuron brains  
Beat multi-megabyte machines?  
The thrust of this theistic schism  
To ferret out God's algorism!



# A Rubric on Rubik Cubics

CODA:

He (hooked on cubing) with great enthusiasm:

Ta! Ra! Ra! Boom De Ay!

Men's schemes gang aft agley.

Let's cube our life away!

She: Long pause (having been here before):

—————OY VAY!