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## Cantor's Coat

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no permanent place in the world for ugly mathematics.”

Hadamard, discussing the general direction of research, asks how the important choice of direction is to be made. He answers emphatically, “The answer is hardly in doubt: it is the same which Poincaré gave us concerning the means of discovery, the same for the *drive* as for the *mechanism*. The guide...is that sense of scientific beauty, that special esthetic sensibility, the importance of which he has pointed out.”

Although the quality of beauty seems to be a personal, subjective concept, general agreement somehow occurs, and many people refer to it with no hesitation. Heisenberg’s essay *The Meaning of Beauty in the Exact Sciences* explores the question in a broad sweep from Pythagoras to Einstein. Following the Classical Greek tradition, he defines beauty as the proper conformity of the parts to one another, and to the whole. He considers what motivated Kepler, Newton, Pauli, and Carl Jung. His writing is compelling. He asks, “But are we dealing here with knowledge merely, or also with the beautiful? And if the beautiful is involved, what role did it play in the discovery of these connections?... What is it that shines forth here? How comes it that with this shining forth of the beautiful into exact science the great connection becomes recognizable, even before it is understood in detail and before it can be rationally demonstrated? In what does the power of illumination consist, and what effect does it have on the onward progress of science?”

Freeman Dyson quotes Hermann Weyl, “My work always tried to unite the true with the beautiful; but when I had to choose one or the other, I usually chose the beautiful.” [ *World of Mathematics*, p. 1831].

This point of view which is so strongly stated by so many creative people, will be a guide for our own creative and learning efforts.

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## “Cantor’s Coat”

Lawrence Mark Lesser

In his coat,  
Cantor kept a note  
his father wrote  
Urging him  
that faith within  
will sustain him.

He picked his path  
the freedom of math  
but met with wrath  
For counting infinities  
real as the Trinity  
uncountably vast.

Cantor believed this was Divine Plan  
But his mentor said, “God made whole numbers,  
the rest is by man!”

So his mentor withdrew,  
said “Your renegade view  
corrupts the youth!”  
Kept from his goal,  
Cantor searched his soul  
to fit part to whole...

“Father, do I hear cries of Galileo?  
For this fight, was I right to give up the violin?”

Some say he went mad  
from the quest he had  
or was he just sad  
When his heart went still--  
sanatorium swill  
against his will.

But in his coat,  
they found a note  
his father wrote.