

Letters to the Editor

The Mathematician Is a Poet

I would like to comment on the article “Birds and Frogs” by Freeman Dyson that appeared in the *Notices* of the AMS, February 2009.

First, a crucial question arises: “Who is a mathematician and what does he/she do?” And before gathering mathematicians into two groups: “birds” and “frogs”, I ask: “Are mathematicians researchers, teachers, employees, or employers? Are they academia or industry or independent people?”

It is obvious that a mathematician is a scientist. However, he/she is mainly an artist, a poet—or perhaps more—as he/she is creative, innovative, and inventive. For instance, one cannot invent the circle when it was already invented many millennia ago. This ridiculous instance is similar to a person who claims to discover the moon, just because he claims to be the first one to see it! However, one can teach about circles, implement historical research about all its related topics...or even use circles in advanced domains such as dynamical systems, algebraic geometry...just to mention a few of the hottest contemporary domains of mathematical research.

On the other hand, to be a poet is to create a beautiful implementation in whatsoever domain of art and science. A painter as Da Vinci or Renoir is a poet, i.e., a creator. Likewise, a musician such as Beethoven or Schubert is also a poet. Also, great mathematicians, such as Euclid, Archimedes, Descartes, Bacon, Newton, Pascal, Einstein, Mandelbrot, Gromov...and many, many others, are all poets before being “birds” or “frogs”. Their contributions to mathematics have raised mankind upward.

On the other hand, I would like to mention a singular category of mathematicians. History is very stingy in geniuses, particularly in “mathematicians AND poets” at the same time. For instance, great men like Pascal

have contributed in many domains of thought. In truth Pascal is more than a poet or a mathematician, he is a mystic. To evaluate well the fullness of this word, one has to delve into the history of the religion of the Orient. In effect, in the couple of centuries preceding Christ, and in the Orient—i.e., the actual Middle East, or countries on the east of the Mediterranean Sea—the mystery religion or “religion à mystère” was born.

In every local community there was a special person, named the “myst” who was the one and only one, designed to hold the whole of the mysteries of the religious world. No one but this person could communicate with the gods (or with God). Later, with Judaism, Christianity, and Islam, the mystics became people who taste within some few flashes, say some lonesome little moment of their lives, an extraordinary joy which opens to them the door of heavenly revelations. Those persons are named “saints” by the Christians, “prophets” by the Jews and “Sufis” by the Muslims.

Mathematicians are mystical people. They have some lonely revelations, like flashes, that Heaven inspires to them. Their work consists in receiving and then “sculpting” the precious raw material embedded in the revelation. Both these two steps of their work are charismas which are not given to everyone; a revelation with no continuous and rigorous correction succeeding it is a chaotic nonsense. Also, a work, even very laborious, with no inspiration is cumbersome and leads nowhere.

Finally, to conclude with a poetical image, I think that the mathematician has three eyes, or I’s. With those, he/she sees the world with the eye of “Inspiration”, of “Intuition”, and of “Insight”. This is why he/she can see truths which remain invisible for billions and billions of human beings. Both “birds” and “frogs” have those three eyes and neither one is

better than the other. Both are the two lungs of mathematics and both are indispensable.

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