Humanistic Mathematics Network Journal

Issue 14 Article 17

11-1-1996

Comments and Letters, Issue 14, 1996

Comments and Letters

Is protective mathematics humanistic? If so, then what?

Webster defines humanistic as the adjective correlate of humanism, thus relating to: la) classical letters, lb) critical spirit, 1c) secular, 2) humanitarianism, 3) attitudes centering on human interests and values.

Humanistic mathematics, as usually viewed, seems to fit lb) and 3), and possibly lc), but not la) or 2). Protective behaviors, such as conserving, guiding, guarding, or even reforming certain human or natural conditions and attitudes, fit 2) and 3), and possibly lb) and 1c), but not la). It seems to follow that mathematics relevant to protection should be also humanistic, when used in a protective way. The usage of protection in conjunction with mathematics may be new.

However, environmental mathematics is too broad, in that it may include short-term efficiency in exploiting the environment, and also too narrrow, in that protection from organized attacks is not ordinarily included. Briefly, protective mathematics should include specialties relevant to protection from pollution, flood and drought, shortages of food, medicine, and drinkable water, habitat degradation, disease, inter-species attack, criminal, military, or terrorist aggression, or technological faults and accidents. These must be firmly based on science and technology, and are not normally considered as humanistic pursuits. Nor are the discovery and measurement of relevant social-psychological parameters so considered. This is not merely a philosophical issue; the needed training in partial differential equations, stochastic processes, computer programming, statistical estimation (and relevant sciences) typically leads to industrial employment, of contestable protective value.

Inclusion of protective mathematics under the humanistic rubric is not only definitionally appropriate, but also would open up a valuable connection with social and economic concerns, in my opinion. Religious denominations which concentrate on spirituality, and downplay protection from practical exigencies, tend to lose public esteem, even if they attend to sin and doctrine.

Students interested in protective mathematics must be aware that the pay is academic (low), the working hours are like those of engineers (long), the subject is detailed, and the techniques (special functions and computing) are rather boring. Finally, careerjolting political and ideological attacks are not unusual.

Attraction of undergraduates tends to be limited to idealistic or brash individuals. Some topics of interest, in my experience, are risk analysis, forensics, DNA, fires, traffic, gang dynamics, resource allocation, demography, and geographic information systems. A short-term source of skilled personnel, not always suited to protection, either in values or income/status expectations, would be displaced Cold War specialists from the USA and Russia.

The US Bureau of Reclamation, the EPA, and environmental consulting firms deal with many of these issues on a continuing basis. Some universities are beginning to take protective science and mathematics seriously, more in specialized institutes than in teaching. Is this a matter for applications specialists only, or should humanistic mathematicians try to intervene, to provide ethical or philosophical perspectives? Some theologians are moving on this, but those with little scientific or mathematical capacity are clueless. Planning and executing a curriculum for protective mathematicians, as a variant of applied mathematics, would seem overdue.

R. B. Leipnik
Professor of Nonlinear and Environmental Mathematics
University of California, Santa Barbara

In your May 1996 issue you printed a short essay titled "On Mathematics in Poetry," by John S. Lew. Perhaps Mr. Lew's explanation of Donne s poem "A Valediction Forbidding Mourning" is not quite accurate. I think Donne is talking about a speaker who is saying goodbye to his wife or possibly his mistress. In the first stanza he says they should part as quietly as virtuous men pass very mildly away.

Later in the poem, he compares himself and his wife to the two legs of a compass. He asserts that he will be the roving foot whereas his wife will be the fixed foot. Thus whenever he makes a move, his wife will respond with a move of her own and so will always be aware of his direction and movement. In addition, the figure of the compass means that there will always be a connection between them, and it may suggest in addition that God is the actual mover of the compass.

I think this explanation catches some of the magnificent abstraction of mathematics. I agree with Mr. Lew that only John Donne has achieved such integration between mathematics and the "real world."

Charles B. Tinkham
Prof. of English and Philosophy
Purdue University

Coming in Future Issues

Seymour Kass
Tribute to Karl Menger

Emamuddin Hoosain
Interviews in the Math Classroom

Howard Levine
See-Duction: A Third Way of Knowing

Julian F. Floren
Book Review: *A Tour of the Calculus* by David Berlinksi

Alvin White
Book Review: *Garbage Pizza, Patchwork Quilts, and Math Magic* by Susan Ohanian

Harald Ness
Book Reviews: *Uncommon Sense* by Alan Cromer and *The Physics of Immortality* by Frank J. Tipler

Bernadette Berken
Book Review: *The Crest of the Peacock* by George G. Joseph

Hardy Grant
Abe Shenitzer at 75

Leslie Jones
Algebra Anyone