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Special Section: On the Publication of the 26th Issue of the Humanistic Mathematics Network Journal

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Special Section: On the publication of the 26th issue of the Humanistic Mathematics Network Journal

Emerson said (and I'm sorry for not having the exact quote), that every institution is the work of a man. We can think about that on two levels; Alvin kept the torch burning for the rest of us to be sure, but the shadow of the man is also the "human" in Humanistic Mathematics.

The past decades have seen mathematics in unimaginable transition. The WWII years may have been a period which experienced an admirable collaboration of thinker, but its legacy, the 50's, was a period in which you had to take sides: "applied" or "pure." Either way you were stuck.

In the 60's, pure math was filtering into textbooks to create what might be (in your mind) "the only decent Calculus book" or something entirely unreadable. One-third of the female freshman class at Brown/Pembroke in those Sputnik years declared math as their incoming major; but non-standard analysis killed most of them off. Often a student's text was the teacher's notes, and that minimal, purple-printed test asked you to prove the Fundamental Theorem of Calculus and solve some problems. (Perhaps your text had problems, but there weren't many!)

In the 70's, during the Vietnam War we saw the vague emergence of the computer and simultaneously distrust began to brew about putting pure mathematicians into the position of guardians of engineering research centers. I remember teaching at Washington and Lee in those days, trying my hardest to persuade my class that the computer would be useful! (We were using it to add three floating point numbers and if your punch cards didn't spill all over the floor in transit to the computer room, you found Fortran couldn't do the problem accurately.)

The 80's were a period good for women and minorities. Cultural concerns, including issues of teaching flourished. Note, 1986 marks the inception of the Humanistic Math Network.

The 90's! What can one say? They went by in a micro-second, raising issues of the calculator, the computer and the web, but equally, a brand new interest in teaching (e.g. calculus reform). Teaching can be the "tar-baby" of mathematics, and we have to temper our interest in being converts to a religion-of-one with the needs of unthinking, financially driven governing bodies.

How then will we, in the future, hang onto the spirit of humanism, collaboration, and gentleness that learners from previous decades enjoyed and shared? My own feelings are quite optimistic. We are again benefiting from the blending of the applied and the pure, and we have a greater awareness of student-teacher relations and issues of assessment with which we must always focus on the need to possibly remodel ourselves.

To create this last issue of the "hand-held" HMNJ, I essentially asked Alvin to step aside as I asked for contributors from the journal's past. Touching these people enriched me. It reminded me of all that was best about mathematics; the people I contacted were people whose books or articles I may have read, in some comfortable reading corner—books "about" mathematics—how we do it and what we mean by it and why we do it. But there are many warm and wonderful members in my immediate mathematical community.

Web generation we now may be, and the terms of the web will be broader, more scattered, faster and yet more time-consuming. But we can exploit the web version of HMNJ by tuning in, to create a new community which retains that understanding of the "human" for which our institution of mathematics is merely the shadow. Thanks, Alvin, for keeping us remembering!

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Alvin White and the HMNJ

When I first met Al White at the winter mathematics meeting in San Antonio in 1987, I already knew his name. We both had links to Stefan Bergman. Alvin did his doctoral dissertation under Bergman at Stanford, and I, a few years previously, had been a graduate student taking Bergman's courses (at Harvard) and later post doc'd for him. Al and I both had high regard for Bergman as a human being, which was not always the case in the mathematical community. This was an initial basis for our friendship. The second basis and more significant one, was our mutual concern for the humanistic aspects of mathematics, however you care to define that term.

Al saw the need for a periodical devoted to promoting the humanistic aspects of mathematics. In those days he was one of the few voices crying in a wilderness of unreflective accomplishment. He told me about the HMNJ and his plans for it. I was fooled by his soft-spoken and occasionally stumbling manner. But Al carried through with his plans.

Things don't just happen; they don't just sprout like mushrooms after a penetrating rain. When one looks closely, there is always an individual who conceives, then creates and nurtures what has been created. In the case of the HMNJ, that person is Alvin White, and over the years the journal has become the leading outlet disseminating articles on the humanistic aspects of mathematics. I congratulate Al for piloting the HMNJ with skill for so many years and I hope he will be able to guide it through its present crisis.

Today when, on the one hand, society is ever increasingly mathematized, and when, on the other hand, mathematics offers many an escape from the difficult dilemmas of civilization, the necessity of relating mathematics to the lives of those who create it and those who are affected by it is increasingly important. Hence the need for reflecting on and publicizing such reflections. Looking over several past issues of the HMNJ, I observe that it contains a wide variety of subjects. There are, among others, didactics at all levels of instruction; biography; linguistics; heuristics; methodology; history and futurology; esthetic; poetry; the spiritual element; women's issues; ethnomathematical issues, book reviews.

What I, personally, would like to see in future issues of the HMNJ is much more discussion of how mathematics has entered our daily lives and what its effects have been for good, for bad, or for neither. As examples, (some of which have indeed been discussed in past issues), product striping, ATM's, voting schemes, the impossibility of counting (census results are a matter of litigation), other parts of mathematics that are litigious (e.g., what math can be copyright), use of mathematical statistics as court evidence, the role of mathematics in social and economic decision making, gambling schemes, the role of mathematics in "green" issues, the role of mathematics in defense.

Thus, referring to the last topic, there is to be in August of this year a conference in Sweden discussing the role of mathematics in war. I would think that a number of papers presented at this conference would be appropriate material for reprinting in the HMNJ. What I would caution against is the HMNJ becoming a journal that deals more and more with classroom issues. There are many journals that concern themselves with pedagogical techniques and curricular questions. There are indeed serious problems in the classroom that need consideration, but despite the inadequacies in the teaching and learning of mathematics, the fact is that the mathematization of society is going forward at an increasing pace, often set in position by the fiat of a techno-competent elite, and which require constant reexamination and discussion. The HMNJ should be characterized by its concern for the problems that mathematizations create.

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Reflections on the Founder

For me, the Humanistic Mathematics Network is inextricably linked with Alvin White, its founder and editor. In this special edition of the Journal, it is probably appropriate to describe what I know of Al, a man whose life and career embody the principles that the many readers of the newsletter find so compelling.

My first meeting with Al White has become a caricature in my mind; the remembered emotion of the events has exaggerated the details. This is probably not what happened, but it is what I remember happening.

I came to Harvey Mudd College for one semester to teach a few courses. Al had written me a very kind e-mail to welcome me, and so I decided to stop by his office and introduce myself. He was seated with a student, both of them at a desk far across the vast room from where I stood in the doorway. I stuck my head in the room; I excused the interruption to say my name; I said that I would come back later.

But Al jumped up, papers flying from him the way pigeons fly from a cat. He clambered past piles upon piles of books to grasp my hand in both of his. Welcome, he said, and I am so glad to meet you. He asked me about an article I had written about mathematical writing, and gazed into my eyes earnestly while he professed his own passion for teaching. For several minutes he explained his philosophy on the importance of teaching well, of communicating well, of keeping the next generation always in mind. Students, he said, students come first. Always. I remember looking past Al at the student still sitting on the chair by the desk, on the other side of piles of books, on the far side of a vast room. Al followed my gaze back and laughed at himself. It is so good to have you here, he said to me, and he clambered back to his student.

My deepest obligation to Al is for a panel discussion that he organized. I was still a young, untenured mathematician, but Al invited me to be one of the panelists. On one side of me sat Leonard Gilman, the author of "Writing Mathematics Well", and whom I had idolized from afar. On the other side sat JoAnne Growney, a mathematician/poet whose books still travel back and forth between my shelves and my lap.

I remember Leonard Gilman playing the piano to describe mathematics in music, and I remember that JoAnne Growney read poems of her own and of others. (I don't really remember what I did at all, but maybe you do: there were 500 people or so in the audience). It was a wonderful evening, and a wonderful opportunity, and I am deeply grateful to Al for including me.

Alvin White has made his career at a small school (about 600 students) that is probably the only Liberal Arts/engineering School in the nation. While you might think that this combination would naturally engender a newsletter like "Humanistic Mathematics", in fact I found during my semester there that the students (and even many of the faculty) were invariably practical-minded, with little room for fluff. Given the choice between truth and beauty, they would choose truth.

And yet Alvin White began a journal-and a national movement-that combines mathematics with poetry, that says that people come first, that defines mathematics as a human endeavor. Given the choice between truth and beauty, Al does not choose. Instead, like Plato and Keats, Alvin White says there is no choice:

Truth is beauty, and beauty is truth: that is all ye know, or need know, on earth.

Thank you, Al!

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On the Twenty-Sixth Edition of HMNJ

I am indeed saddened by the news that HMNJ in its hard copy form will be coming to an end. I'm grateful that EXXON has supported it as it has. But I don't think on-line journals are nearly as useful, as they are hard to read and often text and diagrams get changed on the screen as far as layout is concerned. Anyway, online journals are much harder to keep track of. With HMNJ, I often recall the color of the issue even if not the date, so can find it again more easily. Also, I can browse through it by my nightstand—something I can't do if it is only on the computer!

Nevertheless, while hoping that the HMNJ continues to be a fruitful place to visit online, something must be said about what it has been til now. Namely, it has been a unique place for publishing diverse kinds of articles. For example, where else could long, valuable, and thoughtful articles like, "Will you Still be Teaching in the Twenty-First Century" (#23), "Tilings in Art and Science" (#12), and the timeless, "The Classroom Encounter" be found?

Also, the book reviews have been very thoughtful. Thinking of this as the last issue, I now wish I had shown my appreciation to Alvin more directly, and certainly I never thought of writing to EXXON to tell them what a valuable contribution they made.

So if nothing else, I do want, in this last issue, to thank Alvin for his vision, which he created this journal and for all the hard work he put into it. I think he and the journal have given encouragement to a lot of people whose work and teaching will have greatly benefited from it. His great chapter, "Teaching Mathematics as if Students Mattered," in the book "Teaching as if Students Mattered" (1985), should be read by older folk again, or used to introduce younger ones who have never heard of this book, to ideas now considered innovative, published over 15 years ago. I think this chapter is even more relevant now than then because of the onslaught of testing and the "TELL the facts" type of teaching.

AN ALPHABET FOR THE TWENTY-SIXTH EDITION OF HMNJ

Alvin with his ideas of the need to teach
Better by encouraging

Concepts and
Dialogues
Encouraged us all to learn about
Fascinating subject matter with
Good ideas.
Humanistically Hearing (not just listening) and providing
Inspiration and Intuition tempered with
Judgment and always with
Kindness, he showed us
Learning that
Matters, that seems
Natural, that
Opens students' eyes to
Posing of problems and
Question-asking, together with
Reaching to
Solve those problems by
Thinking in new ways—
Usefully, and in a
Variety of ways, demonstrating the importance of
Writing.
eXxon supported this journal over the
Years so as to provide us with the
Zest to continue our teaching so others, too, will love
math.

Good luck to the HMNJ of the future!

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Being an editor of a periodical is a tedious, thankless job. So many details to worry about. So many chances to do or not do something that somebody will complain about. When readers are satisfied, they thank the author, not the editor. When they are dissatisfied, they blame the editor, not the people who could have contributed articles but didn't get around to it.

And then, what about the courageous, heroic individual who actually dares to found a new publication, and that newsletter miraculously makes it, endures, finds an angel and an audience! Do we remember him or her, when years later we benefit from his or her creative and daring impulse?

So, I say that what Alvin has done is awesome. Now, what about the down side? HMNJ—(Alvin White, actually) accepts what comes. Some is more original, some less. Some is less profound, some is more. The literary-scientific quality of each issue has to be variable. But it is authentic! HMNL is a an outlet, a vehicle for the large inchoate mass of math teachers who want to humanize mathematics. As such, it is incomparable and irreplaceable.

Thanks, Alvin.

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Humanistic Educational Mathematics

My first memory of the notion of (if not the term) humanistic mathematics is of the Pasadena meeting of mathematics educators in March of 1986. Alvin White assembled quite a few impressive people, including some of my heroes of the time and later. We had a great time not reaching consensus about what humanistic mathematics was.

Fortunately, the lack of consensus didn't deter Alvin from forming the network and newsletter. Without a need for consensus on the definition of the term, members seem to fall into at least one of two camps: embracing mathematics as a human activity (usually meaning as part of humanities, having strong connections to literature and history and the fine arts), or teaching mathematics with attention to how humans think and feel and learn.

My own interest is in teaching mathematics as a means of educating humans. I use "educating" in the sense of encouraging development in intellectual, ethical, and identity domains. I'm especially interested in the maturing of peoples' conceptions of knowledge, as described by Perry (1970) from believing that every statement is either right or wrong to seeing truth as relative to context. As Perry found, this cognitive development is intertwined with ethical and identity development. Letting students in on the ambiguity, warmth, imperfections, and elegance of this field that is commonly seen as precise and austere and perfect

can help shock them out of the comfort of a black and white world.

So I'm interested not so much in mathematics education-i.e., in helping students come to attain mathematical skills or to understand mathematical ideas or even to "think like mathematicians'~-but in how mathematics can be taught to enhance education. Back in the 1970's, Steve Brown coined the term "educational mathematics" for that interest-a term included in the title of the Institute I direct. That Steve continues to share this interest is evident in his most recent book (Brown, 2001).

Educational mathematics depends on humanistic mathematics in a variety of ways. To use mathematics as a tool for education, we need to be aware of how humans think and feel and learn. We can use links with humanities astorce to encourage students to grow and change. But the goals are somewhat different. And, while focused on these goals, the major issues of mathematics education-reform curricula, assessment, etc.-are of interest only peripherally. I've written about these issues in various places, and I support myself by working with them, but what I consider my most enthusiastic publications have been about using mathematics to encourage development on the Perry Scheme (e.g., Copes, 1982, 1993).

What about the future of humanistic mathematics education and educational mathematics? To the extent that, as Postman & Weingartner (1969) claim, teaching is a subversive activity, many teachers will continue to teach humanistic mathematics by teaching humanely. A few will communicate the aspects of the field that make mathematics like the humanities.

As for educational mathematics, I suspect that we are not much further ahead than we were 20 years ago. NCTM's influential publications (1989, 2000) ignore this role of mathematics. The reform movement refers to areas outside mathematics only as a source of applications or as a means to help students understand mathematics better. The political battles are about what to teach of and about mathematics: primarily, as facts and procedures or as a set of tools for problem-solving. The justification of mathematics as a means to the end of self actualization isn't appearing in the newspapers.

But learning is a subversive activity as well. I am optimistic that many students, with or without the help of teachers, will experience mathematics in ways that encourage their own development.

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It is hard to say what is the BEST thing about Al White, but one VERY GOOD thing is that he always has time to hear and consider new ideas. The Humanistic Mathematics Network and its journal have for many years provided a source and a forum for the new and the different as well as the old and not-to-be-forgotten.

As a mathematician with strong interests in literature and the arts, I was delighted to find, through HMN, others with similar interests. Al White has been untiring in his support of special sessions at national meetings and journal publication so that teachers and mathematicians of diverse interests may exchange ideas.

Now a poet, my memories of HMNJ focus particularly on poetry from it and I am ever grateful that I met on its pages the Czech poet, Miroslav Holub (1923-

98). Both a scientist (an immunologist) and a poet, Holub's interests paralleled my own and he has become a favorite poet for me.

Below I include a brief poem by Miroslav Holub (translated from the Czech by Ewald Osers) that has been included in *NUMBERS AND FACES: A Collection of Poems With Mathematical Imagery*, an HMN publication that Al and I worked on together in 2001.

THE PARALLEL SYNDROME

Two parallels
always meet
when we draw them by our own hand.
The question is only
whether in front of us
or behind us.
Whether that train in the distance
is coming
or going.

Al's contributions to mathematics and its teaching are legion. He has had new ideas when others were dormant; he has continued when others were idle. He has lived, at least, nine lives. Always a supporter of the artists among mathematicians the visual artists, the musicians, the writers. I have appreciated his support of my poetry and close with this brief poem of my own.

GOOD FORTUNE

is good numbers,
the length of a furrow,
the count of years,
the depth of a broken heart,
the cost of camouflage,
the volume of tears.

Alvin White, may you always have good numbers!

Thank you for your years as chief of the Humanistic Mathematics Network and as editor of the Humanistic Mathematics Network Journal (and, before it, the Newsletter). I am sorry that the years of paper publication have ended for I love the feel of paper in my hands; however, I will find HMNJ on-line, and I hope everyone else does too.

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