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## Letter to Professor Joanne S. Growney

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122 Morningside Drive  
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3 February 1992

Professor Joanne S. Growney  
Department of Mathematics and Computer Science  
Bloomsburg University  
Bloomsburg, PA 17815

Dear Professor Growney

In January 1992 I met you and Professor Alvin M. White at the Baltimore AMS-MAA meeting - during an evening poetry-reading at the Convention Center. A few days later, I sent you my bibliography on mathematics in literature. Thus you know that I have taken both a long interest in mathematics and a long interest in poetry.

Your little quiz in the American Mathematical Monthly for February 1992 suggests that mathematics and poetry are "fundamentally similar". To me this seems false - unless "similarity" has so broad a meaning that it has little significance. At their best, both mathematics and poetry display esthetic qualities and involve technical difficulties, hence require concentration and sensitivity. But so do other arts, other professions, and even championship sports. Via your quiz, you suggest a thesis that stretches the resemblance a bit too much.

Moreover, connecting poetry with truth requires ignoring many witnesses to the contrary — including Plato, whose Republic would have banished poets. Much major poetry seeks only to express a particular emotional view, or even just to fix a momentary impression. In what sense does one find truth in "The Canterbury Tales"? In "Hamlet"? In "Paradise Lost"? Like Samuel Johnson, one may feel that Shakespeare presents characters free from the accidents of a particular place and time, but this is an undemonstrable FEELING. Tolstoy violently criticized Shakespeare, and one has no way to refute Tolstoy.

Your quiz items prompt a few specific comments.

- (3) This is a metaphor for the feeling of wonder, but other things can excite wonder.
- (4) This says that mathematics resembles those disciplines usually called "the arts", or maybe that mathematics should itself be considered one of "the arts". But it no more implies a "fundamental similarity" between mathematics and poetry than it implies such a similarity between figure-skating and poetry.
- (5) Voltaire's "Candide" concludes that one "masters chaos a little" even when one merely cultivates one's garden.
- (6) The Marquis de Sade tried to argue logically that a rational person need observe no moral restraints. Thus also disciples of Sade "practice absolute freedom".

- (7) Our "intellectuals" flub many subjects.
- (8) Poetic comparisons often violate common sense.
- (10) Swinburne is not a major poet, but he survives through a verbal facility that lends some interest to his vagueness.
- (11) Many things can become habits.
- (16) This is a high compliment, but it is hardly a specific characterization
- (17) Nemerov's statement describes poetry, and it describes mathematical ELEGANCE, but it does not describe MATHEMATICS. Birkhoff's long proof of the pointwise ergodic theorem is mathematics. The later short proofs are elegance, but Birkhoff's version was already mathematics.

Doubtless, mathematics strikes some beginning students as a tedious sequence of statements and reasons. Thus mathematicians must keep telling the world that their discipline, to a great extent, is an ART - in which logic is the MEDIUM, as paint and canvas to Rembrandt, or notes and musical instruments to Mozart, or words to Shakespeare. In all such cases, one assumes that facility with the medium is a prerequisite for high achievement. But a relationship of this sort is something less than a "fundamental similarity". Indeed, anecdotal evidence suggests that mathematicians and scientists show more affinity for music than for poetry. Maybe poetry uses words and concepts in ways too different from mathematics, whereas a sequential but nonverbal art meets easier comprehension.

An occasional mathematician may enjoy the ego-trip of writing poetry and thus "being a poet", but few mathematicians acknowledge enough relation between their work and poetry to bother reading the great poets.

I insist that Wallace Stevens is one of the great 20th-century poets. I have read much of his work; I have read a lot about him. I insist that his writing shows no specific influence of mathematics - but very considerable influence of 20th-century PHILOSOPHY. A major preoccupation of his work is to recount his search for reasoned moral and esthetic doctrines. His poetry weighs and develops concepts in an area that is NOT mathematics, but has enough the semblance of reason so that one might think his poems would interest mathematicians. I initially understood something of his work because I had read some philosophy of science, and perceived him trying similar approaches in his own domain. Yet I have never met a mathematician who has seriously read Stevens.

To me, the most notable mainstream literary works by mathematicians are the unfinished autobiography of Sonia Kovalevsky and the short stories of Bertrand Russell. But no one seems to have read those either.

Sincerely,

John S. Lew