THE SENIOR COLLEGE MESSENGER

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This is an organ for members of Senior College to submit short articles that share news, letters to the editor, reactions to the program and anything that they feel will be of general interest. Its regular appearance will allow for an exchange of opinion of topics of interest to the members. In particular, it would be interesting to record reactions to the talks, colloquium topics, books discussed and items appearing in the Messenger*.*

Please submit contributions to the co-editors, Ed Barbeau at barbeau@math.utoronto.ca or Mary Finlay at booksaplenty1949@gmail.com.

FORUM TOPIC: SCHOOL EDUCATION

We invite readers to submit a short essay (about 600 words) outlining how their own discipline might impinge on an ideal syllabus for our schools. We have two contributions, from **Harold Atwood** *and from* **Helen Lenskyj**.

Harold Atwood: Reflections on Education: Where is history? From Grade 5 onward, I attended school in Toronto, at Whitney Public School (Grades 5-8, 1947-1950) and then at the University of Toronto Schools (Grades 9-13, 1950-1955). At the end of Grade 12, I received a Secondary School Graduation Diploma signed by the Minister of Education for Ontario, which proclaimed that I had "completed successfully, in accordance with regulations prescribed for the Department of Education of Ontario, the courses of study for Grades XI and XII in English, History, Physical Education, and the following five optional subjects: Mathematics, Science, French, Latin, German. Dated at 2nd July, 1954." We can note that three subjects, including History, were considered compulsory, while several other important subjects were optional. Historical awareness was apparently regarded as essential for the cultivation of national self-awareness and appreciation of where our country fitted into the world's historical and political jigsaw puzzle.

I recall that History first drew my attention in Grade 5, highlighted by the introduction of some great explorers – Magellan, Livingstone, Peary, Scott and others. The ideas of exploration and discovery introduced by these case histories definitely stimulated my attention and led to my enduring interest in the broader aspects of history, and also (later) to the merits of scientific discovery. Throughout Grades 9 to 12, we were exposed first to British history, followed by North American history, Ancient history and Modern history (including Hitler and Communism). In Grade XIII, History was optional and I was planning to write 11 papers in the Province-wide Grade XIII exams. History had to give way to Biology – but remained with me.

I am unfamiliar with present-day teaching of history in grade schools and high schools, but in recent years various interactions with younger individuals have impressed me that many of them are not 'up to scratch' in history. For example, Lenore (my wife) relates this encounter with her more youthful employees:

"In 2001, I was operating a small art studio with 5 employees. Three of the four young women had graduated from York University, and one female and one male from OCAD (Ontario College of Art and Design). All had studied art history.

"That year, the movie *Pearl Harbor* had been released and a group of my young employees was going to see it. I heard one of them remark that the United States had started

the war by bombing Pearl Harbor. I tried to correct her. She and the others disagreed with me and assured me that the United States had bombed Pearl Harbor which was part of Japan – a dastardly deed by the United States!

"To settle the argument, they took a vote on the issue and outvoted me 5 to 1. The one was me. So history was decided democratically by majority opinion. I was upset and called Harold. No mention of the topic happened after they had been to see the movie."

Intrigued by this episode, I asked one of my graduate students (who has since then had a stellar academic career) whether he knew whom we (Canada) were fighting against in World War II. His view was that Germany and Russia were fighting together against Canada, the United States, and Britain. I loaned him a book on the topic, and to his credit, he digested it and reformed his views of World War II.

It would seem that History may no longer be a compulsory subject during early school education, or else that it is taught differently than it was formerly. Also, ignorance of history can lead to mistaken opinions which when echoed by a large enough like-minded crowd can lead to inappropriate political consequences. We are currently witnessing activity along these lines in the United States where artificial intelligence (AI) has recently been used to create false episodes – a deliberate distortion of history.

Comments from the editor. There are a number of points in this essay that I hope that other readers will amplify from their own perspective. First, a bit of information. The secondary syllabus in Ontario calls for one compulsory Grade 9 credit in Canadian geography and one Grade 10 credit in Canadian history. I did not see anything that would require the students to learn anything about other parts of the world, including the US. Harold was luckier then me; my history courses never got beyond 1914, even though I was a close contemporary of his. At some point in public school, the radio was brought into class and we heard weekly reports on developments at Lake Success (the temporary home of the United Nations on Long Island from 1946 to 1951). However, my folks subscribed to Life *magazine, which helped.*

I will give my reaction as a mathematician. Early in my career, I was asked to give a course in the history of mathematics. My history syllabus in school was similar to that described by Harold Atwood, with a heavy focus on English, western European and Commonwealth history. This provided me with a framework in which to fit mathematical developments, so that I could correlate important advances with the rise of the Renaissance, the British Restoration, pre- and post-revolutionary France and Prussian statecraft. I was particularly interested in Leonard Euler (1707-1783), who was Swiss-born, but was attracted to Russia to join the Academy, newly founded by Peter the Great. The death of Peter led to hard times for the Academy, whereupon Euler moved to the Berlin Academy (1741-1766) under Frederick the Great. He returned to Russia when Catherine the Great ascended the throne. I was very much aware of my unfamiliarity with Eastern European history, and was struck by how political and social developments in that region affected how mathematics developed. (Another part of school education I found useful was having had three years of Latin. My ability to follow Caesar's commentary on the Gallic wars was sufficient to give me a working knowledge of the language to read some of Euler's papers, written almost exclusively in Latin.)

In like manner, at various times, there were mathematical developments in China, Japan, India and pre-Columbian America, whose viability can be linked to political developments, of which I was initially ignorant. It seems that you need the right balance of economic prosperity, class porosity and stability, so that interchange and creativity

is encouraged rather then being smothered by an excess of materialism, an entrenched heirarchy and enforced orthodoxy.

Looking back on my history lessons, I think it is fair to say that part of its purpose was propaganda and fostering a particular world view. This is worth some discussion, especially in view of the observations of Mary Finlay, below, on social justice and how events of the past led to the present calls for restitution and reconciliation.

Helen Lenskyj: Is school education today preparing young people to be competent, informed and engaged world citizens?

For our generation of retired U of T faculty, a facile response would be to invoke the 'good old days' of our own childhood, when we purportedly learned all the essential life skills that are absent among children and youth today. The reality is quite different. As professor at the Ontario Institute for Sudies in Education from 1986 to 2007, I had hundreds of Ontario teachers in my courses, all of which took a social justice approach. Their taking graduate courses reflected their commitment to their work as teachers, as well as their commitment to equity initiatives in schools.

Similarly, albeit slowly at times, the school curriculum changed with the times. In the 1990s, for example, Toronto Board of Education invited me to co-author a teachers' guide on homophobia and sexual orientation for elementary school students, at first at that time. Fast forward to the 21st century, and we see Gay/Straight Alliance groups in more publicly funded schools, while inclusive sex education is no longer seen as controversial.

On other social justice fronts, topics in the Ontario government's Civics and Citizenship curriculum for high school students include democratic values, Canadian and Indigenous governance systems, citizens' rights and responsibilities, inclusion, contributions and service, engaged citizenship and creating change.

These 21st century approaches to citizenship promote critical reflective thinking about the wider world and one's place in it, and how to live harmoniously with others – citizenship that accepts and celebrates diversity and difference.

https://www.dcp.edu.gov.on.ca/en/curriculum/canadian-and-world-studies/courses/chv2o/overview

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CALENDAR OF COMING EVENTS

Events marked with **F** are for fellows and external fellows. Registration a few days ahead is necessary for each event. This can be done in response to a weekly email from Senior College or the Faculty Club to its members that describes the events or through the Senior College website.

Talks: Wednesdays 10-12 (Zoom and in person at the Faculty Club)

September 11: Marlene Shore, *Down from the mountain: reckoning with unrest, risk, and charlatanism in the Canadian university, 1919-1939*

September 18: Kent Roach, *Wrongfully convicted: lessons from the Canadian registry*

September 25: Lissa Paul, *Children's literature and literary history*

October 2: Ian Cusson, *Indigeneity in contemporary opera*

October 9: Ken Bartlett, *Raphael and the mystery of the frame*

October 16: Nandita Bajaj, *Connecting the dots between reproductive autonomy and environmental sustainability*

October 23: Soren Brothers, *Climate, lakes and museums*

October 30: Liat Margolis, *A land-based indigenous youth program*

November 6: Mary Nyquist, *Early modern freedom, tyranny, and the rhetorical poser of 'slave'*

November 13: Yvonne Bombard, *Delivering precision genomic medicine*

November 20: Clifford Orwin, *The 2024 election result*

November 27: Franca Iacovetta, *Remembering Emma Goldman in Toronto*

Colloquia: Thursdays, 2-4 pm
Senior College Centre, 256 McCaul St. (masks advised)

September 19: *What can we do about the escalating crisis in Canadian youth mental health since 2020?* (Organizer: Cynthia Smith)

October 17: *The issues about introducing a universal basic income in Canada. How to pay for it and how to administer it* (Organizer: Trevor Lloyd)

November 14: *The problems of social media* (Organizer: Phil Sullivan)

Book Club: Mondays 2-4 pm (Zoom only) (**F**)

September 9: Margaret Atwood, *Hag-seed* (2016) (Leader: Linda Hutcheon)

October 7: George Monbiot, *Regenesis: feeding the world without devouring the planet* (2022) Leader: Sara Shettleworth)

November 4: Jane Mayer, *Dark money: the hidden history of the billionaires behind the rise of the radical right* (2017)

December 2: Martin Puchner, *Culture: the story of us from cave-art to K Pop* (2023) (Leader: Meg Fox)

January 6: André Alexis, *Fifteen dogs* (2015) (Leader: Meg Fox)

February 3: Kenneth Miller, *The visionary scientists who unlocked the mysteries of sleep* (2023) (Leader: Daphne Maurer)

March 3: Timothy Garten Ash, *Homelands: a personal history of Europe* (2023) (Leader: David Milne)

April 7: Ursula K. Le Guin, *The dispossessed* (1974) (Leader: Molly Wills)

May 5: Emily Wilson, *The Odyssey, by Homer in the new poetic translation* (2017) (Leaders: Linda Hutcheon & Martin Revermann)

June 2: Andrew Stobo Sniderman & Douglas Sanderson (Amo Binashii), *The Valley of the Birdtail* (2022) (Leader: Janet Paterson)

July 7: Fei-Fei Li, *The worlds I see: curiosity, exploration and discovery at the dawn of AI* (2023) (Leader: Susan Pfeiffer)

Aftermath

Mathematics is sometimes touted as an impartial arbiter in resolving disputes. Produce the right number and win your argument. Sometimes, however, it can be a tool to mislead when wielded selectively. It is important to have a judicious sense of what hard calculation can and cannot do.

Consider this medical study carried out about the relative success rates of open surgery for the removal of kidney stones and a less invasive alternative procedure, *percutaneous nephrolithotomy*, which removes the stone via a penetration through the skin. It turned out that, overall, open surgery had a success rate of 78% while the alternative did somewhat better at 83%. So it would appear that the latter procedure is somewhat superior.

However, when we break down the figures a bit, a different picture emerges. In the table, the first two rows give the figures for small stones, with diameter not exeeding 2 cm, and for ones of larger diameter[1]. Columns A, B, C give the total number of procedures, number of successes and ratio of success for open surgery and D, E, F similarly for percutaneous nephrolithotomy[2].

Size of stone		A	B	C		D	E	F
Small		87	81	**93**%		270	234	86%
Large		263	192	**73**%		80	55	69%
Any		350	273	78%		350	289	**83**%

We have the paradoxical situation that the second procedure seems more effective overall, but the first is in each of the categories. When we think about it, this is not that unreasonable. For open surgery, 78% is a weighted average of 93% and 73%. The number of open surgeries is much greater for larger stones (which does not surprise this layman), so one would expect the overall percentage to be much closer to 73% than 93%. However, the second procedure is much more preferred for small stones, so the average of 83% and 69% is more heavily weighted towards 83%, sufficiently so that, in total, percutaneous nephrolithotomy wins.

For those looking for more information and more examples, here are a couple of websites:

https://en.wikipedia.org/wiki/Simpson's_paradox

https://www.bmj.com/content/309/6967/1480

[1] I checked this figure; 2 cm is the diameter of a marble, which surely must be quite traumatic for the kidney and its attendant vessels.

[2] What a joy these medical terms are with their utilization of Latin and Greek roots! The first word comes from Latin: per (through), cutis (skin), while the second is built up from Greek: nephros (kidney), lithos (stone), tomia (incision).