

## THE SENIOR COLLEGE MESSENGER

Issue 30: April, 2024

*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 editor, Ed Barbeau at [barbeau@math.utoronto.ca](mailto:barbeau@math.utoronto.ca)*

### SOLAR ECLIPSE: MONDAY, APRIL 8, 2:04-4:31 pm

During the afternoon of Monday, April 8, there will be a solar eclipse. The path of totality passes just south of Toronto, as you can see from this link. The Dunlap institute for Astronomy and Astrophysics at the University of Toronto is arranging live online coverage featuring experts stationed along the path in Eastern Canada.

For further information, visit <https://www.dunlap.utoronto.ca/public-outreach/eclipse-2024> or email [events@dunlap.utoronto.ca](mailto:events@dunlap.utoronto.ca).

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### 19th SENIOR COLLEGE SYMPOSIUM: APRIL 17, 2024

#### Disappearing Discourses? New Perspectives on Journalism and Literature in Canada

You are invited to another blockbuster Symposium this year. Mark off *Wednesday, April 17* for a day of talks and conversations about the many ways journalists and authors strive to maintain and renew the power of public discourse. Is print journalism really faltering, or just finding different ways to reach readers? Why do we need investigative journalism? How do literary authors reflect and shape Canadian culture? What changes are reshaping those fields and should we try to keep up with them? Come to explore questions like those and hear how current writers are working out answers.

Speakers will include names you may recognize (such as Jonathan Kay, Ian Brown, and Drew Hayden Taylor) and others more likely to be new to you (such as early-career writers Rhythm Sachdeva and Thea Lim). A panel will bring together a bookseller (Joanne Saul of Type Books) and a publisher (Dan Wells of Biblioasis Press), and the program will conclude with a roundtable of lively and diverse authors.

The Faculty Club will again provide a handsome venue, with excellent food and facilities. Fees are still modest: \$20 for Zoom registration (includes full participation in the Q&A portion of each talk); \$65 for in-person registration until the end of day April 3, then \$75 until end of day April 10. Registration forms are on the Senior College website: visit <https://www.seniorcollege.utoronto.ca/> and scroll down for links to the form.

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## COLLOQUIUM REPORT: MENTAL HEALTH OF YOUNG PEOPLE

*On March 14, a Senior College colloquium discussed the topic What can be done about the escalating Canadian youth mental health crisis? The following report is due to **Cynthia Smith**.*

Cynthia Smith and Bill Logan collaborated in preparing and conducting the colloquium. Official studies were identified and circulated (on which most press articles were based). While youth are normally in the age range 12-25, for discussion purposes, the range 17-30 (student years to early working life) was considered.

Several questions were put to the attendees: *Which youth mental disorders are we considering? What is their prevalence and their cause? Why are they increasing? Is it a crisis?*

*How are they treated and by whom? What are the difficulties accessing care and treatment? What preventive measures are available to address them? What limitations exist? What can be done to improve availability of resources for treatment?*

*What solutions are there to deal with youth obsession with social media? How is the education system coping with its daily intrusion into academic life? How are employers dealing with it in early working life?*

Participants clearly had read the circulated studies on the subject as well as widely available media articles. The discussion was lively and broadly participatory. It resulted in much to ponder and some possible solutions. The main illnesses considered were extreme anxiety and depression. The Covid pandemic was especially frustrating for those still in school and early university years. We considered that self-absorption and a sense of entitlement (common in youth) were exacerbated; this may have carried on into part-time and full-time work following post-secondary education. Youth suicide patterns shifted slightly to a majority of men over women rather than the reverse. Some causes of these illnesses were social isolation, housing scarcity, inadequate or crowded accommodation with little access to green space, family strife, lack of computer access, over- and under-parenting (neglect), street drugs and overdose (inadvertent suicide). The impact of social media was discussed. We noted discrepancies in the ways that responsible government ministries (Health, Community and Social Services) collected similar data for similar purposes in different ways, retaining that data in their own silos with no cross-ministerial information sharing. Toronto hospitals also have their local networks but no sharing

outside the internal systems, such as for example the University Health Network (UHN) and Unity Health (Catholic hospitals).

*Possible solutions:* The education system is often the first place these issues arise, but it, like the health system, has limited resources and lacks a mandate to deal with the problem. The Centre for Addiction and Mental Health (CAMH) is working on integrated youth hubs as part of the solution. There may be a role for neighbourhood hubs to provide for all health needs of the population. Such models have been designed three times in Ontario during various administrations but have yet to emerge as part of any government's policy. These models were based on active and successful government-run European ones. One participant identified underused shopping malls as potential places that can be repurposed to this end.

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## INTRODUCTION OF NEW FELLOWS

*Recently, we have welcomed a number of new Fellows to Senior College. In the next little while, we will introduce them here to the members. Many of them are External Fellows, who studied or worked at our university in the past, but pursued their careers in other distinguished institutions.*

**Marlene Shore.** Marlene Shore recently retired as Professor of History at York University, though she continues supervising doctoral candidates as an on-going member of the university's Faculty of Graduate Studies. Her fields of interest, research, and publication include intellectual and cultural history (Canadian, American, British, and European), and the history of the social and behavioural sciences.

Marlene received her BA and PhD from the University of Toronto, and is therefore appreciative of the wide array of activities that membership in the Senior College as an External Fellow offers: the book club, weekly talks, and colloquia, for sharing ideas. In addition to scholarly pursuits, Marlene has taken up pottery and painting.

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## IN MEMORIAM

Andrew Baines (July 17, 1934 – February 27, 2024)

Principal, New College; Professor of Biochemistry, Faculty of Medicine and UHN

## 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.

*Annual Symposium: Wednesday, April 17, 2024*

Location: The Faculty Club and on Zoom

Topic: *Disappearing discourses? New perspectives on Journalism and Literature in Canada.*

*Talks: Wednesdays 2-4 pm* (Zoom and in person at the Faculty Club)

April 3: Raphael Newman, *The work of art in the age of neural machine translation* (**Zoom only**)

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

April 1: William Carlsen, *Jungle of stone: the extraordinary journey of John L. Stephens and Frederick Catherwood and the discovery of the lost civilization of the Maya* (2017) (Leader: Jim Gurd)

May 6: Siddhartha Mukherjee, *The song of the cell: an exploration of medicine and the new human* (2022) (Leader: William Logan)

June 3: Helen Macdonald, *H is for Hawk* (2014) (Leader: Peter Alberti)

July 8: Alex Ross, *The rest is noise: listening to the twentieth century* (2007) (Leaders: Linda Hutcheon, Michael Hutcheon)

## Aftermath

Do you like to play games with a single opponent where nothing is left to chance, both players are completely informed about the progress of the game at each step, only one can win, and success depends solely on your wits? Such games are two-person, zero-sum games (the gain of one player equals the loss of the other) with perfect information. Examples of such games are chess, checkers, go, Othello (reversi) and noughts-and-crosses (tictactoe).<sup>1</sup> Bridge does not count since the make-up of the hands is determined by chance, and during the course of the game each player does not have complete knowledge (for example, of the cards in the hands of the other players).

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<sup>1</sup>The last is played with paper and pencil on a  $3 \times 3$  square array of 9 cells. The players alternately place a symbol in one of the vacant cells, the first player with *X* and the second with *O*. Any player whose symbols occupy a complete row, column or diagonal wins the game.

*Solving* such a game means determining whether either one player can win, no matter what the opponent does, or both players can force a draw. In these games, the players move alternately, so we can distinguish between the first player and the second player. Because of the situation, the players can evaluate the situation and respond to the opponent's move and judge what they can do to enhance their chance to win. In other words, they can follow a *strategy*. For example, the first player (X) in noughts-and-crosses can select the middle cell, a corner cell or an edge cell. The second player (O) will then decide how to respond to each of these choices.

Things can get pretty complicated, so to get a clear conceptual take on the situation, we can reformulate the situation so that each player makes exactly one move, upon which the result is determined. To do this, we look at strategy from a perspective that does not make any value judgment. We can envisage a *game tree*. At the lowest level, we list as nodes all the possible moves of the first player. At the next level, for each of these moves, we draw a branch from each of these to the possible responses.

For example, in noughts-and-crosses, there are three nodes at the outset: *pick the centre cell; pick a corner cell; pick an edge cell*. At the next level, above the first option, we have branches to nodes corresponding to *pick a corner cell; pick an edge cell*. If the first player picks a corner square, then there will be branches leading to *pick the centre square; pick an adjacent corner square; pick the opposite corner square; pick an adjacent edge square; pick an opposite edge square*. We continue on in this way to map out all the possible ways the game can evolve, without any regard to the perceived quality of the moves. A *strategy* is then just a possible path for the game to proceed.

At the beginning of the game, each opponent studies the game tree and picks a strategy in secret: "At each turn, I will select this move in response to the situation so far, including my opponent's last move." This determines a path through the game tree. Then the players hands their strategies to a referee who then creates the game that would have occurred, and declares either that one person has won or there is a draw.

For example, suppose we have a very simple game in which each of the players,  $A$  and  $B$ , has five possible strategies. We can make a matrix in which the strategies of  $A$  determine the rows, and those of  $B$  determine the columns. For each pair of strategies, we can indicate whether they result in a win for  $A$ , a win for  $B$  or a draw  $D$ . If  $A$  has a winning strategy, then at least one of the rows will have entries  $A$  all across. Likewise, for the columns, if  $B$  has a winning strategy. If neither a row or column is such, then each player has a strategy that can block the other from winning and the game will end in a draw. In the example below, if  $B$  adopts strategy  $b_4$ , then  $B$  will win.

	$b_1$	$b_2$	$b_3$	$b_4$	$b_5$
$a_1$	A	A	D	B	D
$a_2$	B	D	A	B	D
$a_3$	B	A	A	B	A
$a_4$	A	A	D	B	B
$a_5$	D	A	B	B	A

This way of getting a coherent overview of a complicated situation is a common procedure in mathematics, in which a lot of distracting complication can be subsumed by a simpler overriding structure. However, learning that games of this type must end in either a win for one side or a draw does not mean that dealing with a particular game is easy. It took 19 years to solve checkers in 2007, as indicated in this article in *Science*. (See also this article in the *Atlantic*.) Othello was solved more recently. Both games end in a draw if the players pick their best strategies. You can find information about other games in the Wikipedia article entitled “Solved games”. Chess and go elude solution, and so computers playing these games rely on artificial intelligence learning strategies rather than a combinatorial approach.

On the other hand, it is left as an exercise for you to solve noughts-and-crosses. However, assess the prospects of the second player if he responds to an initial move in the centre by choosing a cell in the middle of an edge.

The motivation for the development of game theory was to provide a mathematical foundation for economic behaviour analogous to that for physics. The seminal text was *Theory of Games and Economic Behaviour* by mathematician John von Neumann and Oskar Morgenstern. In economics, the situation is more complex where the actors collaborate as well as compete and chance events can occur. Thus the subject treats games more complex than the foregoing. Anatol Rapoport, who was Professor of Mathematics and Psychology at the University of Toronto (1970-1979), Professor of Peace Studies (1980-1996) and founder of *Science for Peace*, applied game theory to political and social issues.