

The Mathematics Enthusiast

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Tall and Goodchild: In Memoriam David Tall (1941-2024) & Simon Goodchild (1950-2024)

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*Exaudi nos pater omnipotens et mittere digneris sanctum
qui custodiat foveat protegat visitet atque defendat omnes habitantes*
(Latin Prayers to Angels)

Abstract: I offer some remembrances of David Tall and Simon Goodchild, their impact on the mathematics education community, in addition to the aims and scope of this particular journal issue.

Key words: David Tall; Simon Goodchild

This issue of *The Mathematics Enthusiast* is dedicated in memoriam to two British stalwarts of mathematics education whose work overlapped at the end of their careers. Simon Goodchild had organized an international research conference on the teaching and learning Calculus as part of the outreach activities of the University of Agder- MatRic Center (in Kristiansand 6-9 August 2019). When I visited Simon earlier that year in May, he was visibly excited about the prospect of David Tall traveling to Kristiansand to participate in the conference and deliver the opening keynote. Due to health issues, David participated virtually in the conference and delivered a beautiful talk entitled “*The evolution of Calculus: A personal experience 1956-2019*” which is available to us all at this [link](#).

The reader is encouraged to view this lecture. In it, David uses Calculus as an example in mathematics where “cultural needs” influence our approach to its concepts and how they are portrayed. He argues for the role human perception plays in what we imbue as visual and symbolic meanings, and the power of digital tools when harnessed (by one such as him that has been immersed in thinking about Calculus concepts for 50+ years). Apropos, in this issue, Brady & Moreno have crafted a four-part piece on the genesis of Calculus with particular attention to the role of digital tools, which is a fitting tribute to the work David did- and his influence on Jim Kaput’s SimCalc project at UMass- Dartmouth.

David’s presence in mathematics education was significant- he was passionate about the thinking and learning of higher mathematics- and passed on this passion to numerous PhD students and colleagues. Often when I encountered his (former) students, they would introduce themselves as: “I am _____, and I was the PhD student of David Tall!”

I had the privilege of being absorbed by David’s gregariousness at numerous conferences especially at *the Fourth Congress of the European Society for Research in Mathematics Education* in Sant Feliu de Guíxols Spain (CERME4-February 2005). This conference was held inside the walls of an old monastery but the hotel where some participants stayed and the meals were served had a large panoramic glass-paneled atrium overlooking the cobalt blue Mediterranean. David would sit there, hold court- his presence drew numerous people around him. I would wait until

everyone left after lunch to the monastery, so I could make him linger and ask him many things such as being Michael Atiyah's PhD student at Oxford, then Richard Skemp's PhD student and why he felt the need to get another degree when other mathematicians simply reinvented themselves as mathematics education researchers. He did not mind and humored me with stories about both his legendary supervisors, and why he felt the need to procure legitimacy to conduct research in mathematics education. I will not go into all this here.

David co-authored a chapter with John Pegg in *Theories of Mathematics Education* (Sriraman & English, 2010)¹ entitled "The fundamental cycle of concept construction underlying various theoretical frameworks. This time I was privy to his meticulous methods of making a persuasive argument when the drafts were being passed back and forth- in this chapter a modified SOLO model was being put forward. In the aforementioned book all chapters received one or more commentaries- and I asked David if I could solicit a commentary from Ed Dubinsky whose theory had been criticized in the chapter. The reader may probably be unaware of David's intellectual disagreements with Dubinsky's APOS theory of concept development. APOS is a neo-Piagetian extension of the notion of reflective abstraction applicable to advanced mathematical learning. Even though it is considered a "local theory" it was/still is widely used as a conceptual framework in undergraduate mathematics education in the U.S. Being the scholar he was, David was not remiss to a commentary criticizing the modified SOLO model. Ed declined to do the commentary. The tributes to David written by Ian Stewart, Keith Weber, Matthew Inglis, Kin Eng Chin and Sepideh Stewart reveal his larger-than-life persona, commitment to advancing his ideas, his kindness and his chutzpah.

Simon Goodchild dedicated a large portion of his life to service as a Christian in the communities he lived in. This overlapped with his professional life as seen in his selflessness towards his colleagues, and by the zeal with which he championed mathematics education in Norway during the latter part of his career. This was most evident to me through his editorial work in *The First Sourcebook on Nordic Research in Mathematics Education*² (Sriraman, Bergsten, Goodchild et al., 2010) and in the subsequent founding of the MatRic Center at the University of Agder in 2014. He also championed the idea of "communities of practice" which has left a lasting impression in the different research groups in the Nordic world.

I had a close friendship with Simon and was privy to his wit on many occasions- I will share one anecdote when driving him from Banff (Alberta) to Missoula (Montana) in December of 2010 after a meeting at the Banff International Research Station (BIRS) on Teachers as stake holders in mathematics education research. I had organized this meeting with colleagues from Canada, Germany and Australia. Simon was excited to participate in this and also wanted to visit me after the meeting concluded. Simon had never ever visited the U.S and was now entering it in an unusual manner via a land border at Coutts(Alberta)/Sweetgrass(Montana). On a rather chilly -25° Celsius

¹ Sriraman, B., & English, L. (2010). *Theories of Mathematics Education*. Springer Berlin.

² Sriraman, B., Bergsten, C., Goodchild, S., et al (2010). *The First Sourcebook on Nordic Research in Mathematics Education*. Information Age Publishing, Charlotte, NC.

winter morning, we showed our passports to a young irate border patrolman manning the booth. We were asked to pull over and go in for further questioning.

Simon was asked:

“Why are you entering the U.S for the first time at this particular border crossing?”

In his characteristic manner he replied-

“I met my friend many years ago in a penal colony founded by Britain, and perhaps you may have heard of something called the internet- which has allowed us to remain in touch and collaborate.”

Let me close by saying that the border authority was not amused and the interview lasted considerably longer – with me having to corroborate Simon’s story independently...before he was allowed to enter the United States. Later in the car as we were nearing Great Falls (Montana), Simon remarked,

“They don’t have any sense of humor, do they?”

The remembrances of Simon written by Paul Ernest (his PhD supervisor), Kenneth Ruthven, Raymond Bjuland, Merrilyn Goos, Chris Rasmussen, Paola Valero (and colleagues) reveal nuanced portraits of Simon. One commonality in all these tributes are aspects of his selflessness, and placing others before himself. Simon’s championing of Etienne Wenger’s notion of “communities of practice” is revealed in the article by Valero and colleagues in which they explore “material bearings of identity” and explore conditions that can lead to success in university mathematics.

The 22nd volume of *The Mathematics Enthusiast* culminates with two more articles- one that presents new and beautiful rational approximations to well-known trigonometric functions. The last article is an application of category theory to societal issues –in which functors are used to provide a lens into existing discourses on equity. I wonder what David would have made of this *procept!*