

## # Vale: Andreas (Andrew) Quale 1938-2016

[Svein Sjøberg, professor (em) in science education, Oslo University, Norway]

Andrew Quale has passed away, at the age of 78, after having fought cancer for the past ten years. His first name was Andreas in Norwegian, but since he spent formative years in Australia, where his father worked as an engineer for large post-war hydropower construction works, most colleagues abroad know him under the name Andrew.

I came to know Andrew when I was in the final year of my physics class at school. He was five years older than me, and a student at the University in Oslo. He came as a substitute teacher when our physics teacher was on sick leave. I loved physics from my reading of many books, and had at a young age decided that I would become physicist myself. But I found school physics increasingly dull and boring, overloaded with firm facts, and always giving correct answers to questions nobody had asked.

The few lessons we had with Andrew restored my interest in physics as an intellectual as well as philosophical challenge. So I stuck to my plans to study physics, assuming that the physics I would meet at the university would be full of fascination and challenging ideas and with social, cultural and philosophical perspectives and implications.

(These expectations were not met, actually, but that is another story. But I became a physicist anyway.)

Andrew's PhD from 1974 was "On the Dynamics of Gravity and Matter Fields", related to Einstein's theory of general relativity. For many, this sounds very narrow and special. But when he talked about it, he managed to present the physics and its implications in thought-provoking ways. Andrew had also studied Russian, and had tough discussion with Soviet scholars. He told us about the reception of the relativity theory in the Soviet Union, and the many phases in the responses. Some issues were obviously related to the facts that Einstein was German, and also a Jew. More important was the alleged conflict between Einstein's theory and Marxism. Andrew's presentations of conflict like these placed physics as something different than the textbook version: sterile, clean and objective, and outside society, history, culture and conflicts.

Such experiences were probably also formative for Andrew when he much later became interested in constructivism, and even wrote a book on *Radical Constructivism: A Relativist Epistemic Approach to Science Education* (2008). He insisted on being a constructivist, but he was also a person with sense for rationality and indeed objectivity. He was also an atheist and humanist, but with the greatest respect for all sorts of beliefs.

Andrew did not pursue a further career in physics research, but went into teaching. He held several positions, and also widened his field to include the use of information technology at a very early stage of this development. When he came into teacher education at Oslo



University in 1995, we became colleagues until he retired. After that we were even closer friends.

Andrew was a real renaissance person, with an open mind and with nearly encyclopedic repertoire of science, culture, philosophy, art and music. When he passed away after years' of struggle against his cancer, he was working with new articles, and he studied Italian language. He had an urge to see his physics in a wider context, as a cultural product of the human mind. These values were also entrenched in his teaching and his relationship with colleagues and other people. Being tall and strong, he also talked with a strong voice. But he was nevertheless a good listener, always interested in other people's experiences and points of view. He made friends everywhere.

In addition to his impact on the local, Norwegian scene, he became an active participant in international fora. He was particularly at home in the environment related to HPS&ST, for history, philosophy, sociology and science teaching, where he met colleagues with similar interests, values and commitments. He had close friends in many countries. Many will remember Andrew as a most interesting, kind and always engaged person. He will be missed.

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[Michael R. Matthews, School of Education, UNSW, Australia]

It was a great pleasure for me and for many other international scholars to meet Andreas at numerous biennial IHPST conferences where he was always an engaging and keenly interested contributor to the programme and to conference social life. We talked education, philosophy and about his high school experience in Australia, where he came with his family in the 1950s and was a border at Canberra Grammar School. Canberra was the nation's capital but then not much more than a big country town; in a wide, brown, flat, monolingual land. He found that 'football' was played with an oval ball, it was called 'rugby', and although a big boy, he never mastered the techniques of this foreign game. The contrast with his native mountainous, multilingual, soccer-playing Norway could not have been more stark.

And when he came to Australia for his school reunion we had most enjoyable meals and conversations shared with fellow IHPST and UNSW colleague Peter Slezak. Both of us shared Andreas' views on the need for education to convey something of the 'big picture' of science and its connections to culture, society and philosophy; and for science education to foster a scientific outlook or orientation to natural and social questions. And we agreed that for all of this, teachers having knowledge of and interest in HPS was essential. We had of course, animated discussion about constructivism, a topic on which Peter and I had opposite opinions to Andreas, some of mine having been laid out in a critical review of his *Radical Constructivism* book. But such scholarly disagreement did not intrude on our friendship and warm email exchanges.

During my long period of editorship of *Science & Education* many authors benefited from Andreas' anonymous informed and diligent reviewing of their manuscripts, all of which were done on time and with no need for 'reminders'. And I was pleased to be able to publish three of Andreas' own papers in the journal:

- Quale, A.: 2002, 'The Role of Metaphor in Scientific Epistemology: A Constructivist Perspective and Consequences for Science Education', *Science & Education* 11(5), 423-441.
- Quale, A.: 2007, 'Radical Constructivism and the Sin of Relativism', *Science & Education* 16(3-5), 231-266.
- Quale, A.: 2011, 'On the Role of Mathematics in Physics', *Science & Education* 20(7-8), 609-624.