

Vale Michael Lou Martin (1932-2015)

Michael Martin, a philosopher of science whose work was known to many in the HPS&ST community, died two months ago in Lexington Massachusetts at age 83 years. After his first teaching appointment at the University of Colorado (1962-1965), the remainder of his university career was spent in the Philosophy Department at Boston University (1965-1996). There he was a contributor to the university's stellar Centre for History and Philosophy of Science which was guided along by Robert S. Cohen and Marx W. Wartofsky. The former said of Michael that: 'He was a fiercely independent thinker both in his teaching and scholarship, and a humane believer in the possibility of cultivating constructive thinkers out of his students'.

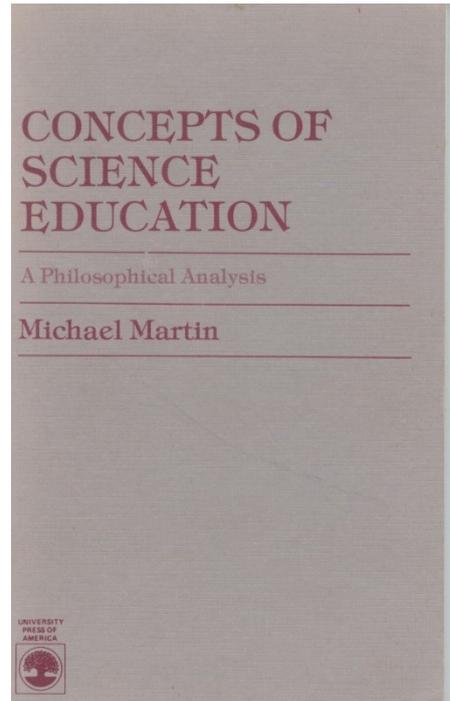
In the 1950s Michael served in the US Marine Corps where, among other things, he developed a lifelong commitment to fitness and healthy living. He spent time in gyms, including his own basic home gym, some decades before most philosophers had even formulated the concept of fitness let alone embodied it. In his early adult years he took up boxing and competed in the prestigious Golden Gloves national competition. After military service he completed his bachelor's degree in science (1956) at Arizona State University and master's degree in philosophy (1958) at the University of Arizona, then moved on to do his PhD in philosophy at Harvard University (1962).

On retirement Michael battled for almost two decades with the progressive debilitation of Parkinson's disease. Nevertheless he kept occupied with a wide range of scholarly and other engagements. He published books, edited anthologies and wrote papers on philosophy of social science and philosophy of religion; he indulged his thespian interests with a Boston amateur theatre company; he did charcoal drawings; he wrote an academy-based detective story.

Perhaps most surprising to those who knew only of Michael's philosophical life, he took up voice lessons in order to sing the demanding Schubert lieder. Jay Hullett, a former Boston philosophy colleague and now publisher, commented that 'Mike's singing Schubert was a dimension of his mind and spirit that I'd not known in all of those years in which we'd been colleagues, and it made me aware of a spiritual/artistic/poetic depth of his that, alongside his intellectual and physical power, his deep decency and generosity of spirit, made me see him as somehow an almost uniquely "complete" man'.

Michael enjoyed a long, happy and fruitful marriage to the philosopher Jane Roland Martin with whom he raised two sons, Timothy and Thomas, and with whom he enjoyed the company of five grandchildren. Doubtless he would say that his marriage to Jane was the best thing he ever did.

It was my pleasure and good fortune to meet Michael and Jane during my first sabbatical leave at Boston University's HPS Centre in 1978. They were generous and gracious hosts to an unknown, young Australian departmental visitor. Their hospitality included being welcomed to dinners at their delightful family home in Newton where listening to Jane play the family's grand piano was a special treat. I have had the good pleasure of being able to maintain fairly regular contact with them both in the intervening almost 40 years.



Michael was noteworthy for being a philosopher of science who took time to seriously engage with issues in science education at a time when only a handful of philosophers did so. His 1972 book, *Concepts of Science Education: A Philosophical Analysis* was the first English language book to address philosophical issues in science education. The book's five chapters, dealing with Inquiry, Explanation, Definition, Observation and Goals of Science Education, provide ample evidence of the usefulness of philosophical training for the improvement of instruction, texts and statements of aims and objectives in science courses. The book was republished in 1985.

Michael's 1971 paper on Objectivity, in the *British Journal for Philosophy of Science*, correctly stated that some philosophers of science - most notably Thomas Kuhn - have argued that the objective testing of scientific theories under certain circumstances is impossible. A theory in one paradigm tradition cannot contradict a theory in a different paradigm tradition since no term in the one theory means exactly the same as any term in the other theory. For the same reason no consequence of the one theory can be the same as any consequence of the other theory. Thus, according to Kuhn, theories in different paradigm traditions are incommensurable. If this is so, the standard view of scientific theory testing is incorrect, and the door is then opened to other views of theory testing and decision making, including as some would have it, politics, ideology, business interests, or in Kuhn's infamous words 'mob psychology'.

There are obvious and immediate implications of this argument for what is taught about 'the nature of science' in school science programmes. There are also implications for the orthodox justifications of making science a compulsory school subject. These implications are very close to the surface in all situations where the teaching of science needs to be defended.

Kuhn's argument had enormous influence across the academy, including in science education where it was used to launch numerous 'counter hegemonic' and supposedly 'progressive'

research programmes. Michael provided a nice, careful, technical, step-by-step demolition of Kuhn's argument, showing that his premises are false and his incommensurable conclusion does not follow. A great pity that science education was at the time so distant from philosophy of science; a state of affairs neatly captured in the title of a 1985 article by Richard Duschl - 'Science Education and Philosophy of Science Twenty-five, Years of Mutually Exclusive Development'. Michael's arguments could have been profitably attended to by the many educators who were so mesmerised by Kuhn that the discipline became a 'Kuhnian cheer squad', in the words of Cathleen Loving and William Cobern (2000).

The arguments well displayed the central point of Michael's book: seemingly technical issues in philosophy (in this case, meaning, sense, reference and theory appraisal) have consequences for practical matters in education. Get the former wrong and precious resources are wasted in the latter by travelling down blind alleys or along mistaken routes.

In a 1994 contribution to *Science & Education* on pseudoscience and the paranormal, Michael argued for his expansive, Enlightenment understanding of science education, saying:

I will maintain that learning about pseudoscience and the paranormal should be part of the goal of science education. The goal should not be to instil such beliefs in students but to get them to think *critically* about such beliefs. Science education, I will maintain, should not be narrowly conceived. The goal of science education should not just be to get students to understand science but *to be scientific*; that is, to tend to think and act in a scientific manner in their daily lives. Learning to think critically about pseudoscientific and paranormal beliefs is part of being scientific.

With the mushrooming of pseudoscientific and paranormal industries and ideologies that prey on the gullibility of so many, and for which routine education seems such an inadequate antidote – such deliberate, fostered and practised expansion of the scientific outlook or 'habit of mind' or 'scientific temper' is not an idle pedagogical indulgence. (The thematic issue on 'Pseudoscience in Society and Schools' of *Science & Education* (vol.20 nos.5-6, 2011) examines this topic.)

Michael was an avowed defender of atheism, writing several articles, books and editing anthologies on the subject. In his *Atheism: A Philosophical Justification* (1990) he provided a brief statement of the modest purpose of his defence of atheism:

The aim of this book is not to make atheism a popular belief or even to overcome its invisibility. My object is not utopian. It is merely to provide good reasons for being an atheist. Atheism is defended and justified. ... My object is to show that atheism is a rational position and that belief in God is not. I am quite aware that theistic beliefs are not always based on reason. My claim is that they should be. (p.24)

Michael was careful, informed and considered in all he wrote; the very model of an analytic philosopher. After the foregoing statement, he wrote:

This book has limitations not only from an atheistic point of view, but from a general philosophical one as well. ...no extended theory of rationality or justification is given. ... Indeed, it seems to me that any attempt to justify them by subsuming them under a larger theory would be premature, given the controversial state of general epistemological theories. (p.25)

But this was not an advance excuse for shallowness or cavalier treatment. The book has 476 pages followed by 53 pages of notes and references. Scholarship, detail, logical argument *and* modesty typified of all of Michael's work.

Abner Shimony, a Boston University physicist and philosopher colleague said that 'Michael did not muddy the academic waters'. This is not faint praise. At a time when obfuscatory writing and ill-informed commentary is rife in education (and elsewhere in the academy), Michael Martin's patient and clear analyses are a wonderful legacy for the discipline. So also was the never dispirited or defeatist manner in which he dealt with the cruel constrictions of the illness that progressively immobilised him and finally finished his life. He remained patient and good humoured to the end. Sadly Michael died just two weeks short of being able to celebrate with Jane the 53rd anniversary of their marriage.

All in the HPS&ST community and beyond who knew Michael and his work extend their condolences and warm wishes to Jane, his sons, and the Martin family.

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(Full curriculum vitae at: http://infidels.org/library/modern/michael_martin/martin-bio.html)