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Laudatio James E. McGuire

(lecture on Thursday April 28, 2011)

Maarten Van Dyck

Professor McGuire's first major paper, which he had co-written with his then colleague at Leeds University Piyo Rattansi, came out in 1966 and carried the somewhat enigmatic title "Newton and the 'Pipes of Pan'". At this point he had been lecturer in history and philosophy of science at Leeds University for some years, after having studied at Oxford University, King's College in London, and the University of Western Ontario. He would stay in Leeds until 1971, when he joined the department of history and philosophy of science at Pittsburgh, where he is still very active as professor emeritus today. Both in Leeds and in Pittsburgh he was part of remarkably strong groups of historians of science. In this respect, his distinguished career testifies at least to the partial fulfilment of George Sarton's lifelong struggle to get history of science recognized as a fully autonomous discipline, with strong institutional backing. And it needs no mention, our being gathered here today to honour this distinguished career is also a sign of recognition of the discipline itself. That we gather in this magnificent old auditorium moreover shows that such recognition often goes hand in hand with a number of *traditional* measures, such as offering a symbolic "chair" and a medal, or wearing these very otherworldly academic gowns. Now these are of course merely symbolic gestures, and as such could be considered contingent and even arbitrary, but they arise from a more essential impulse: they testify to the fact that a scientific discipline is partly constituted by the relation it takes up to its own history – by the specific ways in which it itself becomes a *tradition*. In saying this, I am actually merely

paraphrasing George Sarton himself, who opened his text entitled “Science and Tradition” as follows: “The title of this group of lectures ... is paradoxical. It would seem natural to twist it a little and instead of saying Science and Tradition, to say Science versus Tradition. Indeed, the two terms are to some extent antithetical. The word tradition suggests preservation and continuity; on the other hand, science is the most revolutionary force in the world.” (Sarton 1952, p.3) But he goes on to argue: “Far from there being any conflict between science and tradition, one might claim that tradition is the very life of science.” (*ibid.*, p. 11) This, I believe, was the true core of Sarton’s vision of the necessity of the discipline of the history of science. It is only through history of science that science can reconnect with its own essence and *telos*.

A very similar vision seems always to have animated professor McGuire’s work in the history of science. It is no accident that the collection of his major papers on Isaac Newton was called *Tradition and Innovation*. And in *Science Unfettered*, a book that he published in 2000 together with Barbara Tuchanska, the constant dialectic between tradition and innovation is analyzed in detail using the philosophical framework of a hermeneutic ontology. Not only has his own historical and philosophical work been constantly guided by this perspective, it was also a topic that greatly occupied the mind of his prime object of study: Isaac Newton. No doubt, almost everybody present here is familiar with the famous saying by Newton that he had been able to see a little bit further than people before him, but only because he was standing on the shoulders of giants. Now, George Sarton, who had written his PhD-dissertation here in Ghent on Newton’s mechanics, took a particular interest in this saying, and tried to trace its earlier history, a work that was further elaborated on by his student, the great sociologist and recipient of the very first Sarton Chair, Robert K. Merton. But it is professor McGuire who more than anybody else has shown how fundamental was Newton’s commitment to the tradition of which he considered himself to be merely the last in line. In the 1960s McGuire discovered among the Newton manuscripts a series of documents that proved that when working on a second edition of his landmark *Principia*, Newton delved deeply in ancient sources, looking for evidence that rather than charting absolutely new territories with his theory of universal gravitation, he was actually rediscovering ancient wisdom – and he found

such evidence too, as he pointed out that when the Ancients talked about, and now I quote Newton, “the God Pan’s playing upon a Pipe and attributing musick to the spheres” (McGuire and Rattansi 1966, p. 118), they were obliquely referring to the mathematical law of gravitation that was instituted by God in creating the world. Not very convincing evidence, we would be tempted to think, and it is clear that it depends on an already firmly held belief in the existence of a golden age in the past of human culture, with the knowledge of our modern age by definition being nothing but an attempt at recovering what had been lost since. As McGuire and his co-author pointed out in great detail in their paper on “Newton and ‘the pipes of Pan’”, Newton was not an exception in his time in holding this idea. One example, not mentioned by them, was the Flemish mathematician and engineer, Simon Stevin, about whom George Sarton wrote a long article in 1934, in which he commented as follows on Stevin’s ideas on the so-called *Wysentyt* (the “Age of the Sages”): “The idea of a primordial golden age is one of the oldest conceits of the human mind. . . . The fact that such strange ideas may be found alongside others of the purest scientific kind is but another illustration of the infinite complexities of the human mind. No man is always consistent, certainly no man of genius.” (Sarton 1934, p. 260) It is at this critical juncture that professor McGuire, from his very first publication onwards, has consistently chosen another perspective than did Sarton. Rather than distinguishing between purely scientific ideas and strangely inconsistent, mythical addenda to these, he has always attempted to excavate the underlying nexus in which these apparently very different ideas were intrinsically tied together for Newton. After his piece on the “pipes of Pan”, McGuire engaged in a sustained enquiry in the fine-structure of the central concepts of what he has called Newton’s ‘metaphysics of nature’. In a series of groundbreaking papers he showed how Newton’s understanding of the basic concepts of his natural philosophy, such as space, time and force, can only be fully illuminated by taking into account his theological preoccupations. Newton’s view of God as an omnipotent creator, first and foremost characterized by his absolutely free will, was essential in sustaining his natural philosophy, including his theory of universal gravitation. Now, it is one thing to state this as a general claim, it is quite another thing to convincingly fill it out in every detail, using new manuscript evidence along the way. It is obviously the latter that Professor McGuire has done. Each of the papers collected in his *Tradition and Inno-*

vation is a small masterpiece of conceptual analysis, laying out the intricate relations between crucial Newtonian concepts. Taken together they are widely recognized to be unsurpassed until this day. In their combination of archival research, textual interpretation, contextual embedding, *and* a full understanding of the mathematical and empirical content, they show the kind of exciting results that a fully established discipline of history of science can give rise to. So while in a number of respects the resulting picture differs crucially from Sarton's views on how the history of science should be written, it can only do this because it exemplifies the notion that was dearest to his heart: that of progress. And here more specifically, progress in the history of science itself; progress that is only possible because it has become a scientific discipline in its own right.

Full justice is not of this world; hence I will not expand on the rest of professor McGuire's extensive work, such as his recent book on René Descartes, published together with his colleague Peter Machamer, his work on rhetoric and science, or his recent and as yet unpublished studies on ancient philosophy. I will also not list his students who made their own name not only in the field of history and philosophy of science, but in other fields as well. I will not do all this, but I do want to close with a few remarks that start from the wide range of interests characterizing professor McGuire's work and personality. I have stressed the importance of the coming of age of history of science as an autonomous discipline, but for Sarton that was always a means, not an end. The end was what he called a "new Humanism", and this humanism was antithetical to excessive specialization, the danger always lurking behind the necessary professionalization of research. History of science would be exactly a privileged place for integration and unification of insights from different fields; a place where our culture could come closest to a satisfactory interpretation of itself. Our humanism cannot and need not be that of Sarton, who wrote for his times, not for ours. But we can still uphold the ideal that history of science could play a crucial part in constituting who we are and want to be at the beginning of the twenty-first century. And it is here that we can find professor McGuire's work on the metaphysical and theological infrastructure of Isaac Newton's new science of the utmost importance and relevance. Not because it would allow us to directly answer any of the pressing questions concerning the possible place of religion in our contemporary worldview,

which to a large extent is shaped by scientific theories that are often inspired by Newton's; but maybe because it could help us to formulate better questions. In teaching us to understand Newton's thought in a historically and contextually sensitive way, professor McGuire's work also forces us to grapple with the historicity of our own thought. In the activity of interpreting past science, we ourselves are always essentially involved. Or to put it for the last time in Sarton's words: "If the past were not part of your present, if it were not a living past, it would be better for you to leave it alone." (Sarton 1920, p. 6) We should all be grateful to professor McGuire for having shown how to make so much of seventeenth and eighteenth century science into a living past, one that from now on we can leave alone only at our own peril.

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