

# In Memoriam: Professor Marc R. de Leval (April 16, 1941–June 26, 2022) - a tribute

Martin J. Elliott and John E. Deanfield

Great Ormond Street Hospital for Children, London, UK

## Original Article

**Cite this article:** Elliott MJ and Deanfield JE (2022) In Memoriam: Professor Marc R. de Leval (April 16, 1941–June 26, 2022) - a tribute. *Cardiology in the Young* **32**: 1365–1366. doi: [10.1017/S1047951122002359](https://doi.org/10.1017/S1047951122002359)

Received: 7 July 2022

Accepted: 8 July 2022

First published online: 2 September 2022

### Keywords:

Modified Blalock–Taussig–Thomas shunt; Fontan; TCPC; human factors; Great Ormond Street

### Author for correspondence:

Martin J. Elliott, Great Ormond Street Hospital for Children, London, UK.

E-mail: [martin.elliott@icloud.com](mailto:martin.elliott@icloud.com)

This article has been copublished in *Cardiology in the Young* and in *World Journal for Pediatric and Congenital Heart Surgery*.

## Abstract

This manuscript is a personal tribute to Professor Marc de Leval from two of his colleagues: Professor Martin J. Elliott and Professor John E. Deanfield. As stated by the authors: “Marc’s career history is presented in the accompanying eulogy from the current Heart & Lung Team at Great Ormond Street Hospital (GOSH), allowing us to highlight Marc’s personal qualities that made him such an inspirational colleague. . . . Marc was, as we have said, the cardiologist’s surgeon. He was also the surgeon’s cardiologist, bridging the two disciplines and fusing the team. He was delighted by the advent of interventional cardiology and did not see it as a threat or competition, but instead, as appropriate for the well-being of his patients. He recognised how traumatic surgery could be for patients and their families and sought to avoid it whenever possible by alternative treatments. Marc will be remembered with love and admiration by his many patients and their families, whose lives he changed. His technical skill, energy, devotion, humour, intellect and influence will be sorely missed. May he rest in peace.”

It is our honour to write this personal tribute to Marc de Leval (Figure 1). Marc’s career history is presented in the accompanying eulogy from the current Heart & Lung Team at Great Ormond Street Hospital (GOSH),<sup>1</sup> allowing us to highlight Marc’s personal qualities that made him such an inspirational colleague.

Marc was already in post as a young surgeon when we arrived, from our backgrounds in adult medicine, at GOSH in the early 1980s. This was a time of rapid and great change in both paediatric cardiology and surgery, and the cardiac unit at GOSH was one of the global epicentres of that change. It had already espoused a multidisciplinary approach involving Cardiologists, Surgeons, Anatomists, and Physiologists, and its regular meetings (in the tiny space of the prefabricated “hut” in which we worked) were hotbeds of debate. The chemistry in the room was remarkable. Marc’s basic training in the United States of America with Gerbode and McGoon provided a world-class foundation, and his academic curiosity and intellectual rigour were vital to that debate and to the burgeoning understanding of morphology and echocardiography. He was, and remained, the “cardiologist’s surgeon,” able to combine his deep understanding of the physiology with an innate grasp of three-dimensional relationships. This really accelerated the adoption of disruptive technology like cross-sectional echocardiography, which transformed the pre-operative and post-operative investigation. His interventions were predictably wise and precise and delivered with humour and charm, with a glorious accent and the famous twinkle in his eyes. Marc grasped the complex and revelled in explaining it to others. He made congenital heart disease an accessible subject, and never, ever stopped learning about it and trying to improve the outcomes of treatment.

Marc cared. He knew his patients and their families, and he inspired their trust by his openness and honesty. He also knew his staff and cared for and supported them, fostering their careers, and guiding them through difficult times. He was always available for advice and always considerate and thoughtful. His advice was often as much philosophic as practical and often more effective because of that, making one think for oneself. He was like a brother.

Marc’s work ethic is legendary. An early riser, he would either play squash at GOSH or drive to The Royal Automobile Club (RAC) [<https://www.royalautomobileclub.co.uk/>] in Pall Mall, London to swim in its spectacular pool before seeing his patients at the private Harley Street Clinic and then at GOSH. It was not unusual for him to have seen all his patients before the residents, who themselves had striven to be there before him. He missed nothing and expected precision from his team. But he was gracious in any criticism, simply making it clear that he expected better. Although mortality was falling through the eighties and nineties, surgery remained relatively long and complex, and intensive care was in its relatively early stages. Days (and nights) were long. Our debriefs were often in the nearby The Queens Larder pub [<https://www.queenslarder.co.uk>] over a pint of Stella Artois, where case management, research, and politics could be happily dissected.

The start of transplantation, the move to neonatal cardiac surgery, improvements to cardiopulmonary bypass, the rapid improvement in imaging, and the arrival of intensive care all happened in the 1980s. Marc’s personal contributions are listed elsewhere, but we want to emphasise how difficult some of these changes were, for both a department and a surgeon.

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**Figure 1.** Professor Marc R. de Leval (April 16, 1941–June 26, 2022).

Marc was extraordinarily self-critical and engaged in a constant search for excellence. A minor misstep in the operating room was accompanied by a stamping of the foot and a cry of “Marc” or “Dieu.” His expectations were high, but Marc *never* blamed others, always himself.

The institutional decision to move from the atrial repair of transposition to the arterial switch was very challenging and was beautifully discussed by Marc in his paper with Catherine Bull in 2000.<sup>2</sup> But the emotional toll that change took was considerable and underestimated; the Senning was being performed with low mortality and apparently good medium-term results, and the switch was, at the time, riskier. When Marc identified a cluster of personal failures in the arterial switch procedure, he was deeply upset. His response was extraordinary, reflecting his humility and drive to go the extra mile to benefit his patients.

Whilst many of us would have given up or been in an environment where cardiologists sent the cases somewhere else, Marc decided to relearn, to reskill, and with humility and the support of his cardiology colleagues, to learn from other top surgeons. It says a great deal about Marc’s relationships with his peers that he was able to both garner the relevant support and be willing to accept such help — a feat not every surgeon would be able to accomplish.

Marc was endlessly curious and a man of ideas. He was very good at finding experts and creating collaborations. His humility, despite his obvious expertise, combined with his native charm proved irresistible to so many. Marc read widely *around* his subject, and by bringing experts into GOSH from apparently unrelated disciplines was seminal to much important work, particularly in relation to fluid dynamics, outcomes analysis, and the human factors of teamwork. He was able to persuade these experts to “get involved” and to bring their skills to bear on our work. We know he was particularly influenced by the work of Professor James Reason on human factors, Sir David Spiegelhalter on statistics, and Guy Hirst and Trevor Dale from the airline industry on safety. The resultant regular international meeting “Risky Business”<sup>3</sup> developed with Dr Allan Goldman is a direct product of those collaborations and continues to influence workers in many industries, not just medicine.

Marc could be regarded as an “influencer,” not of the social media variety, but as someone who changed the course of his chosen field. The management of congenital heart disease is very different because of his work. He changed the way we

*think* — encouraging us by example to improve the quality of our work, and to be more transparent, more self-critical, and even more receptive of new ideas and technology. He was a genuine innovator, and we remember him saying often: “there has to be a better way.” He was always searching for that better way or encouraging others to do so, in management as well as in science.

Marc was a great teacher *en masse* or one-to-one. In the operating room, he was a delight to work with and both of us, as surgeon and cardiologist, benefited from that direct contact and his ability to explore and explain differences between derived diagnosis and actual findings. His willingness to share and explore improved everyone’s understanding. We were learning *with* the best and not just from the best.

The many e-mail tributes we have received from his host of trainees indicate just how much his legacy means to them. To a person, they all say how much they have used his writings and the Stark, de Leval, Tsang textbook to guide their work. His physical guidance improved all their skills. Marc’s papers, so many of them seminal, are beautifully written, concise, and clear and will serve as templates for all developing academics. We suspect that they will long be read as they were published at the great nodal shifts in the discipline, accurately reflected the thinking at the time and predicted the next big thing.

Like many of us, Marc’s dedication to his work required lots of time away from his family. They understood the need for this and loved him not only for his person, but also for the work that he was undertaking. Marc made a particular point of being a great grandfather, making up for the time missed with his own children and taking a special pride in the achievements of the next generation. Remarkably, Marc found time for non-work pursuits, with a particular love for art and music. In his retirement, he took up photography and produced extraordinary images of the heart and circulation, as well as his medical world.

Marc was, as we have said, the cardiologist’s surgeon. He was also the surgeon’s cardiologist, bridging the two disciplines and fusing the team. He was delighted by the advent of interventional cardiology and did not see it as a threat or competition, but instead, as appropriate for the well-being of his patients. He recognised how traumatic surgery could be for patients and their families and sought to avoid it whenever possible by alternative treatments. Marc will be remembered with love and admiration by his many patients and their families, whose lives he changed. His technical skill, energy, devotion, humour, intellect, and influence will be sorely missed. May he rest in peace.

**Financial support.** This research received no specific grant from any funding agency, commercial, or not-for-profit sectors.

**Conflicts of interest.** None.

**Ethical standards.** The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national guidelines on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

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