

# Professor Marc R. de Leval in 100 words (as articulated by his London trainees and surgical colleagues)

## Letter to the Editor


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Marc de Leval, Great Ormond Street Hospital, London, UK, 2001.

## Introduction

Professor Marc R. de Leval left us on 26 June 2022. During his long and illustrious career, Marc faced many challenges, but his greatest followed the diagnosis of Parkinson's disease—a journey he faced with grace and courage. He would forget words during a conversation, and sometimes lose his balance while running for a bus; more importantly, he felt he was no longer in control, which had been such a central aspect of his remarkable life. But he did not lose his learnt mind—in fact, his retirement was a very productive time. Marc managed to get close to his heart and find out what really drove him on during his amazing career as a paediatric cardiac surgeon. He worked on his biography, *Humility and Humanity*, which remains as his ever-lasting lesson to us all [1]. We shall miss our friend, and we know many others will too. For this tribute, we have (on short notice) invited a number of his former surgical fellows and colleagues, now paediatric heart surgeons from around the world, to reflect on how Marc's teaching affected their careers and inspired them. We asked only that the contributors limit their comments to 100 words (which was difficult for all). The result was compelling.

## Commentary

As I think back over the many factors that have influenced my career, my relationship with Marc de Leval was the single most important influence. It was not simply the 'facts' that I learned from him when I was his senior registrar, but a lifelong way of thinking about problems, incorporating a team, designing solutions and the importance of introspection that I learned from Marc's mentorship. Professor de Leval represented the ultimate balance of teacher and student, philosopher and pragmatist, all with academic honesty, critical thinking, innovation and vision. Marc was an outstanding human being without arrogance, an elegant technical surgeon without vanity and a confident leader without egotism. **Edward Bove, Ann Arbor, USA**

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I had the privilege of knowing Marc since 1972, when he first came to Great Ormond Street. I would like to stress 3 aspects of his personality: his incredible energy, his professional loyalty and great friendship. At one stage, we were known as the only 2 surgeons in the same department who were on speaking terms! Marc would start the day swimming in Royal Athletic Club (RAC), then play squash and be at Great Ormond Street by 8 a.m. He still had energy to play squash with me at lunch time! He was an extremely talented surgeon—and his research was extraordinary. **Jaroslav Stark, London, UK**



Marc de Leval, London, UK, 1984.

Marc always felt Belgian and tasked himself to train every single paediatric cardiac surgeon from his native country for a whole generation, including me. He was obsessed in his life with education, teaching and learning from others. The most memorable of my moments in Great Ormond Street were those ends of afternoons when, with Gordon and David, we gathered with Marc and discussed without barriers any topic, initially related to cardiac surgery but soon spreading beyond this scope. He was an avid reader and was fascinated by science, especially outside his own field of expertise. When explaining his vision that lymphatics were the key of the Fontan circulation, we greeted him with doubtful gentle smiles ... who would have known how right he was? The Friday night drinks in Queen's Square were the right end to those discussions. **Yves d'Dudekem, Washington, DC, USA**

On my first day at Great Ormond Street, I assisted Marc on a repair of a quite complex discordant transposition. I was mesmerized by his command of both the technical procedure and the physiology. After 35 years of friendship and thousands of cases, I met Marc for the last time in London. He was well into his final illness, but seemed to be at peace with the world. We discussed this same patient, including many surgical details, and he remembered everything, even the name. I have worked with some extraordinary surgeons, but it was Marc's selfless sharing of his brilliant technical skills and hard-won knowledge that lit the fire for me, and opened so many doors around the world. Thank you, Marc, it was a great honour to know you. **Tom R. Karl, Brisbane, AU**



Marc de Leval, Peter Robinson, Tom Karl. Sydney, Australia (aboard Quest), 1996.

It was an honour to be trained by Drs Stark, de Leval and Elliott at Great Ormond Street, 3 great surgeons, great teachers and great human beings. In 2005, Marc was an invited speaker for a meeting organized by my institution in Florida. His memorable and ground-breaking keynote lecture was entitled 'Human Factors in Cardiac Surgery'. During this visit, he was asked if the modified Blalock-Taussig shunt should be re-named the 'de Leval shunt'. Marc quickly pointed out that there are 3 reasons why a surgeon should never agree to have their name attached to an operation: (i) Someone is likely to have performed this operation before you did. (ii) The operation may not work as well as predicted. (iii) Your name could be forever associated with the complications from the procedure (e.g. Waterston Shunt). Professor de Leval was a man of integrity, honesty, humility, innovation, selfevaluation and persistence. He made the world a better place, and he made me a better surgeon. **Jeffrey Jacobs, Gainesville, FL**

On my first day as Senior Registrar at Great Ormond Street. I was waiting in the Cardiac ICU for the morning ward round to start when Professor de Leval arrived, fresh from his swim at the RAC. He welcomed us warmly to the unit, then turned to me and said, 'you are an extracorporeal membrane oxygenation (ECMO) expert?' I replied, 'not really an expert Professor, but I have some proficiency with the technique'. 'What is the best ACT during ECMO?' he harrumphed, 'well we usually shoot for 160–180 seconds Professor' was my answer. He looked at me with just a slight smile beginning behind his round glasses. 'I was there with Hill for the first ECMO, it was the same in 1971, nothing has changed!' I learnt a lot from Professor de Leval during my final year of training and had the honour to assist him and be assisted by him, as well as to participate in his human factors research group. Good-bye Professor, the world is a poorer place without you. **Giles J. Peek, Gainesville, USA**

I met Marc when I was a Senior Registrar at Great Ormond Street in the summer of 1992. He was finalizing data collection and analysis for his landmark paper, 'Analysis of a cluster of surgical failures. Application to a series of neonatal arterial switch operations' [2]. Working with and learning from him was an experience like no other. I can think of no other surgeon who shined such an unflinching light on his own performance. His dedication, innovation, ability to understand the complex anatomy and physiology of congenital heart disease, and care for his patients were unsurpassed. He was the first mentor to be formally honoured by the AATS Foundation (Marc de Leval Fellowship). He remained a friend and mentor over my career and I am forever grateful. **J. William Gaynor, Philadelphia, USA**

Marc treated us registrars with respect from day 1, irrespective of our background. No matter how well prepared we were, he always managed to ask a question that would catch me by surprise. This highlights his extraordinary attention to detail, his quest to have objective data guiding decision-making and operating. I spent some time with Marc operating together after his retirement from the NHS and remain amazed by his transformation into a patient and humble colleague offering much needed guidance. Despite his standing, he would always find time to listen and was genuinely interested in fellow humans. **Martin Kostolny, London, UK**

On 26 June 2022, we lost Professor Marc de Leval, a giant in paediatric cardiac surgery. In addition to his countless clinical and scholarly contributions, what made him unique was an exceptional mixture of experience, passion, intensity of thought, humility and relentless pursuit of excellence applied to paediatric heart surgery. These qualities were all very palpable. He was the ultimate role model. The ultimate ‘thinking surgeon’. He played a defining role in influencing my career and that of many surgeons. His legacy will be reflected in those of us who were honoured to benefit from his mentorship and friendship. **Marco Ricci, Iowa City, USA**

My life was enriched by a professional and personal friendship with Marc since 1989, not only sharing many hours of hard work but also precious leisure times at our personal homes or during conferences, many with our dear mutual friend, Jane Somerville. His unconditional generosity in transferring knowledge and surgical skills, exceptional dedication, self-criticism and attention to detail, left a legacy to both patients and colleagues that experienced his kindness and wisdom throughout our careers. I deeply regret cancellation of a 2020 visit to Belgium due to restrictions imposed by management of the ‘COVID-19 pandemic’. **Susan Vosloo, Cape Town, South Africa**

Marc taught us to critically analyse the data and imaging for every patient—take nothing for granted and give it your full attention. His crystal-clear thought process could cut through a complex problem, and he was usually 2 steps ahead of the rest of the room in conference! He demanded high standards, but showed us that you gain respect through integrity and honesty, with quiet authority, and no need to be overbearing or confrontational. Enclosed is a photo from 2019 when Victor and I had lunch with Marc before I left for Toronto. I was asking Marc for advice on how to cope with



David Barron and Marc de Leval. London, UK, 2019.

all the challenges of leadership both clinically and academically in moving to a new environment. His advice was simple: ‘Just show them that you are a good surgeon . . . everything else will follow’.

**David Barron, Toronto, Canada**

Marc was a mentor and a great educator, and a close friend and a gentle person. As his young assistant at the Harley Street Clinic in 1982, I was earning 400 pounds a month, living in a rented room, with a young wife and a 1-year-old baby back in Italy. I earned too little to bring them to London, or even to travel to see them. I talked with Marc about my difficulties, and the next morning, Marc, strangely talkative, told me to ‘find a small apartment, I’ll pay half of it . . . and from today your pay is 60 pounds per intervention . . . see if you can bring your wife and your son here . . .’ At that time, we were operating 10 cases a week, so I could now afford a small apartment. After 15 days, Simona and Michele arrived in London, and I went back to being a happy, young, less poor, surgeon. I will never forget this kindness. In this way (and many others), Marc contributed enormously to my own surgical education and my future in paediatric cardiac surgery. **Bruno Murzi, Forte dei Marmi, Italy**

Remember the famous bare feet in wooden clogs, and the occasional stomping when ‘perfection’ was not attainable? Throughout my Senior Registrar year (1999–2000), Marc’s booming voice pleaded in his unmistakable French/Belgian accent we can all still hear, miss and love: ‘Attention to detail! Ali, attention to detail!’ It seemed a simplistic outburst, no technical pearl or new operation, but years on I grasp the affectionate and caring point he was trying to make: the immensity of our privileged job comes down to infinite minutiae, which ultimately may alter the course of a child’s life. Thank you, Marc, and rest in peace. **Ali Dodge-Khatami, Hamburg, Germany**

100 words I associate with Marc de Leval:

Accomplished. Acute. Adaptable. Animated. Ardent. Authoritative. Belgian. Brave. Brilliant. Caring. Captivating. Cerebral. Charming. Chivalrous. Collaborative. Competitive. Considerate. Courageous. Creative. Cultured. Decisive. Dedicated. Determined. Dexterous. Diligent. Discerning. Distinguished. Dynamic. Edifying. Elegant. Eloquent. Eminent. Empathetic. Energetic. Enlightened. Enthusiastic. Estimable. Expert. Fervent. Firm. Forbearing. Forthright. Funny. Generous. Genius. Gentle. Gentleman. Guide. Heroic. Honest. Honourable. Humane. Humble. Imaginative. Incisive. Influential. Inspiring. Jovial. Judicious. Keen. Kind. Leader. Legend. Listener. Magnanimous. Master. Meditative. Mentor. Modest. Nimble. Nurturing. Objective. Open-minded. Original. Passionate. Pellucid. Perceptive. Persuasive. Philosophical. Precise. Principled. Questioning. Resolved. Safe. Sagacious. Scrupulous. Selfcritical. Sensitive. Shrewd. Singular. Straightforward. Supportive. Tenacious. Thoroughbred. Twinkly. Vulnerable. Wise. Youthful. Zealous. IRREPLACEABLE. **Martin Elliott, London, UK**

I am proud to be able to call Marc my mentor and my friend. His influence on my career and my practice of our specialty is immeasurable. I had the privilege to spend nearly 5 years working with him and learning from him. His creative approach to solving complex problems and his incredible attention to detail has guided my own practice both in and out of the operating room. To this day, I still do so many things exactly as he taught me and I can still hear his voice in my head. I am certain the impact he had on me rings true for all those fortunate enough to spend time with him. I am forever grateful for all that he gave me intellectually, technically and professionally. Our field has lost a truly visionary leader and person. **Gordon Cohen, Mesa, USA**



Martin Elliott, Gordon Cohen, Marc de Leval. London, UK, 2002.

I had the great honour to have been trained under the guidance of Professor de Leval. One of my favourite memories occurred when he allowed me to perform an arterial switch operation (ASO) at Great Ormond Street Hospital during the period that he was conducting his landmark study of how human factors affected outcomes of the ASO. He was so stressed, and so was I. Many times, during the procedure, I offered to move to the assistant role, but he declined. When the aortic cross-clamp came off there were massive ST changes in the electrocardiogram, but after a few min it all normalized and the patient did well. What a relief! I will never forget this great act of kindness. Our field will miss his presence. **Victor O. Morell, Pittsburgh, USA**

I particularly enjoyed the training system in Great Ormond Street, progressively allowing the trainee a greater responsibility over the year. Once, we repaired a tetralogy of Fallot heart, with a valve-sparing approach and trans-atrial infundibular resection. As the first surgeon, I was proud of the procedure, and everything went smooth coming off bypass. After Marc left, I measured the right ventricle (RV) pressure. The pressure was nearly systemic, and I puzzled what the reason could be. Marc came back in, looked at the operating field, said dryly: 'cut these 2 pericardial traction stitches', and the RV pressure normalized. This lesson I have never forgotten, and I have been able to apply this also at home ... **Katrien Francois, Gent, Belgium**

My first week at Great Ormond Street, after evening rounds, Mr. de Leval took his team to the local pub (unheard of in the USA). Clearly, his concept was that we were all (himself included) here to learn about and treat children with congenital heart disease. The second (and perhaps most important) characteristic was that he was determined to improve in his craft and explore new areas, specifically with arterial switch procedures and transplantation. He sought help from those he felt were the best. Because the Great Ormond Street arterial switch results were not particularly good at that time, Mr. de Leval frequently consulted and visited Jan Quaegebeur in Leiden, who had established good results with this procedure. Dr. Quaegebeur also visited Great Ormond Street to observe and advise. For transplantation, he sought the assistance of John Wallwork of Papworth Hospital. He was instrumental in getting the G.O.S. transplant program off the ground. Mr. de Leval had no issue with identifying problems and seeking solutions. It is this pursuit of excellence that I remember most about my experience as his trainee. **Charles Huddleston, St. Louis, USA**

One day I assisted Marc who successfully separated a challenging double outlet right ventricle. Unfortunately, ventricular function was markedly impaired when coming off bypass. We discussed ECMO, Marc declined, however, the patient later

required cannulation on pediatric cardiac intensive care unit (PICU). I did not think too much about the latter, and to my surprise received a hand-written letter from Marc the following day: 'Dear Carin. Thank you very much for coming back and cannulating that baby on ECMO. I should have followed your suggestion to go ahead with cannulation right away. Thank you, Marc'. I have kept the letter to this day as a reminder to be humble.

**Carin Van Doorn, Leeds, UK**

I had the privilege to work with Marc de Leval in Great Ormond Street in 97–98. His character made an impression. He was slender, aware and had a French accent. Initially, assisting him was challenging: cursing in French and stamping his foot. Later, when we had learned his habits, we realized that he always pursued the best possible result and that he was not always happy with himself. No excuses or explanations! Nevertheless, operations went straightforwardly and monthly and he made them look very easy. He was well aware about everything in his patients, about their past and present. Thank You Marc! **Ilkka Mattila, Helsinki, Finland**

I had the fortune to train at Great Ormond Street under Marc de Leval, Jarda Stark and Martin Elliott. Marc has always set an example for us to follow, for his dedication, his surgical skills and his complete knowledge of paediatric cardiac surgery. He has been a mentor for several surgical generations, and I was so fortunate to be one of them. This is a great loss, but his example and his teachings will be remembered forever. **Carmelo Mignosa, Catania, Italy**

Marc saw the potential role of the lymphatic system in the Fontan circulation earlier than most. During my surgical training as Senior Registrar at Great Ormond Street in 2000–2001, he fuelled my interest in investigating this almost invisible system. I returned to Denmark inspired by his academic and clinical curiosity, and with a great desire to return answers to our shared questions. Over the following 20 years, Marc's continued belief, support and many inspiring discussions helped in building a lymphatic research programme. Modest and humble as always, he completely displaced his own role and acknowledged the contribution of others. **Vibeke Hjortdal, Copenhagen, Denmark**



Vibeke Hjortdal, Marc de Leval. London (Chain of Hope), UK, 2015.

Marc was a serious man and a gentleman. Most of his teaching was gathered by observing him in the operating room, scientific meetings and during social events that we were lucky enough to attend. Humble and demanding with himself, he would only speak when necessary, just as he made no superfluous movements during operations. When I applied for a consultant job, he mischievously advised me that we have 'no friends at this level'. This clearly was not true, seeing how he was loved and respected by colleagues and family. Merci, Marc for your teaching. We look up to you. **Olivier Ghez, Doha, Qatar**



Marc de Leval. Marylebone, London, UK, 2019.

Crossing paths with Marc was an experience to cherish. When I first met him in May 1995, I was immediately impressed by his quiet and unassuming demeanour despite his stature in our field. Once in London, it became clear to me that behind the man, there was a methodical and tenacious thinker, who, while maintaining a very busy practice, never lost sight of his quest to take on the challenges of congenital heart surgery. He was always thinking about ways to make things better. His intellectual curiosity and academic rigour were evident. I was stunned when one night he accepted a suggestion to do a bilateral sequential lung transplant instead of a domino on a cystic fibrosis patient. Go ahead . . . unimaginable! Marc was a true scholar in our field, always considering other perspectives looking for a way to improve. He was a teacher, a mentor and a friend, but above all an extraordinary role model, to whom many of us cannot express anything but sincere gratitude. *Reposez en paix.* **Christian Pizarro, Wilmington, Delaware**

### Conclusion

Marc's enormous scientific contributions are well known to all of us working in the field, but these personal memories really speak for themselves. We are grateful for having had the opportunity to work with such an outstanding teacher and human being. We are all a part of Marc's legacy, hoping to pass on some of his concepts and philosophy to future generations of paediatric cardiac surgeons.

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