



## SPECIAL REVIEW

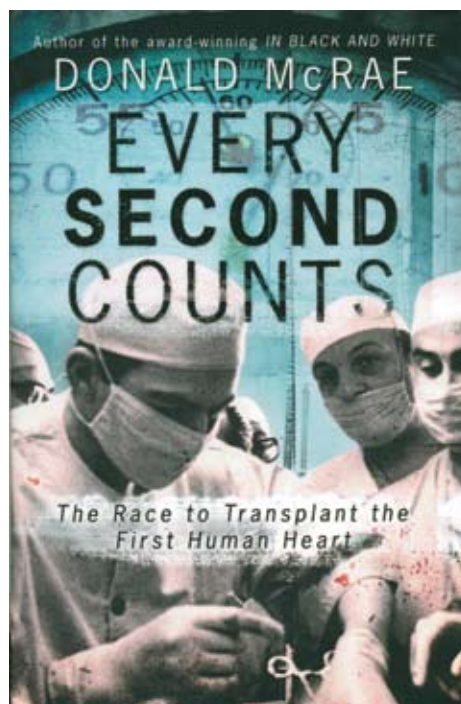
## The race for the first heart transplant

Peter Folb

*Every Second Counts*. By Donald McRae. Pp. 356. R160 (excl. p & p). Simon & Schuster. 2006. ISBN 0743239954 (P/B).

In his book entitled *The Courage to Create* (1975, Bantam Books), Rollo May describes a hierarchy of courage. The highest level of courage, in May's construction, is that required to create something new, where nothing previously existed. The account of how Chris Barnard conducted the first human heart transplant at Groote Schuur Hospital, Cape Town, in the early hours of 3 December 1967, reflects the extraordinary courage not only of Barnard and his team but also of others whose collective work made it possible to perform what has become one of the most celebrated surgical operations of all time.

Donald McRae, a South African-born author now living in England, has described in *Every Second Counts* the pioneering work of Walt Lillihei, Owen Wangenstein, Norman Shumway, Richard 'Dick' Lower, Adrian Kantrowitz, Chris Barnard and others in operating on the human heart, and correcting congenital heart disease such as Fallot's tetralogy, Ebstein's anomaly, transposition of the great vessels of the heart, and cardiac valvular disorders. Direct surgical access to the heart had been made possible by the introduction of new technologies, notably the heart-lung machine and hypothermia, by Wangenstein and Lillihei in Minnesota in the 1950s. Barnard, Shumway and a number of other young surgeons had trained there. McRae has described in



meticulous, comprehensive and at times overwrought detail the human and scientific efforts that made the first human heart transplant possible. He also chronicles the aftermath of the operation, Barnard's subsequent celebrity and marked fall-off in productivity, and the reaction of his 'competitors' and their own subsequent careers.

After qualifying as a doctor at the University of Cape Town and a short spell in rural general practice, Chris Barnard initially trained as a physician (internist), during which he conducted research into tuberculous meningitis. Subsequently he became a surgeon. All his later work reflected his exceptional ability to care for patients holistically, to conduct innovative research, and to embrace and improve on novel methods in the care of patients. The methods and standards that he set in postoperative management, and the attention to detail, anticipated those of intensive care units in later times. The results that Barnard achieved in correcting and curing congenital heart and cardiac valve disorders after he returned to South Africa in 1958 to establish cardiac surgery at the University of Cape Town and Groote Schuur Hospital were comparable to and generally better than anywhere else in the world. Besides the determination, talent and phenomenal ambition of Chris Barnard himself, these successes were made possible by the skills of the cardiac clinic led by Professor Velva Schrire, anaesthetists,

pre-eminently Dr 'Ozzie' Ozinsky, Barnard's fellow surgeons, and the team of dedicated nurses who cared for his patients postoperatively round the clock. His achievements were as much the result of diagnosis and care as they were of technical accomplishment.

McRae, in *Every Second Counts*, while acknowledging Barnard's abilities, has a somewhat different take on Barnard's success in what he describes as the race to transplant the first human heart. He attributes it to his competitive drive always to be first, disregard for the necessary animal research, insufficient attention in advance of the operation to the problems of

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rejection of the transplanted organ and immune suppression required to prevent rejection, and insistence on the cessation of brain activity as being the moment of death of the donor. (Schrire and Barnard had taken care to anticipate allegations of experimentation in apartheid South Africa by ensuring that both the donor and recipient were white.) Most seriously, McRae alleges that Barnard stole the idea and the technical approach to cardiac transplantation from Dick Lower, whom he had previously watched operate on dogs in the latter's laboratory. That, according to McRae, was the basis for the considerable animosity with which Barnard was regarded by his surgical contemporaries in the United States. (It is an important matter. If Barnard had been invited into Lower's laboratory, and provided there had been no undertaking given by him not to apply and further use what he had seen there, he would have been free to have used what he was shown for his own work. Only Chris Barnard and Dick Lower – the latter is still living – would know the truth. Lower himself has not made the allegation.) It is true that Barnard's preoccupation was with human rather than animal experimental work and that he believed that animal cardiac transplantation had limited application to humans. He was also perhaps more ready, given the uncertainty of the law at the time, to deal with the ethical

issue of the moment of death of the donor. (South African law, and the law in many other countries, remains vague even in the present day on defining the moment of death, generally deferring to the decision of the attending doctors.)

The case of those critical of Chris Barnard, including McRae, is greatly strengthened by his conduct after his famous operation. His productivity as a surgeon fell off and eventually became negligible; he endorsed ludicrous anti-ageing treatments, sought out the famous, became a natty dresser, and was a notorious philanderer.

Donald McRae has added greatly to the history of the first heart transplant, the fortieth anniversary of which falls this year, through his diligent research and chronicling of the event and the efforts that preceded it. His depiction of scenes is strictly accurate. His judgement of the principal architect, Chris Barnard, is severe, but then Barnard was his own worst enemy. What McRae has failed to do is sufficiently portray Chris Barnard as a brilliant doctor who unfailingly cared for his patients with exemplary determination and dedication. He had novel and imaginative ideas, and was ever ready to apply them. Chris Barnard's results at the time in human cardiac surgery were unsurpassed, anywhere. Above all, he was creative and courageous. That is quite a lot for one life.