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SCIENCE AND PRACTICE OF CARDIAC SURGERY CURRENT AND FUTURE

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I am deeply conscious of the great honour of being admitted to the French Academy of Sciences this morning. For this privilege I am extremely grateful.

My specialty, Cardiac Surgery, deals with fighting cardiovascular disease, which is a major cause of global mortality and morbidity in the developed and developing countries. It is estimated that 17.5 million people died worldwide during 2005 from cardiovascular diseases. The science, art and practice of cardiac surgery have continued to grow since its early beginnings, approximately 50 years ago. I have been privileged to witness and take part in a small way in this steady and accelerating process of a specialty dedicated to fighting a major human disease.

Heart surgery started with closed procedures aimed at correcting valve disease as well as palliating a number of congenital diseases. With pioneers in Europe, such as Dr. Charles Dubost in France and Lord Brock in Britain, I had the privilege of acting as an assistant to Lord Brock. Another break through came with the introduction of the heart and lung machine to allow open-heart surgery. This rapidly enabled cardiac surgery to deal with correction of congenital heart disease, valve disease as well as diseases of the aorta with major European contributions. A notable example is the contributions of Professor Alain Carpentier, a Member of this Academy.

Application of these techniques has saved millions of lives around the world, improved the quality of life of another large group and promises to deliver more. Cardiac surgery involves art and the humanities and several studies have shown that cardiac surgeons who have studied humanities before becoming cardiac surgeons are more successful in this profession.

The recent epidemic in heart failure has demanded concerted efforts of cardiologists, engineers, cardiac surgeons and basic scientists and stimulated the of a relatively new concept, "the Surgeon Scientists" who contribute to Translational Research with the promise of applying scientific discoveries in the field to patients care as rapidly as possible and continue to stimulate progress of science in general. Our group in London and selected areas in Europe and the US have devoted a large amount of time, energy and money to this application of basic science to advancing cardiac surgery.

Finally cardiac surgery made great contributions to Humanitarian Medicine. It is estimated that for each million individuals, it is necessary to have human and other resources to perform 1000 heart operations/year. This is being achieved in developed countries. In contrast in developing countries the figures can be as low as zero in countries with 70 or more million populations. Our group and others, in particular Professor Carpentier, has devoted much effort to addressing this glaring injustice and inequality.

Again, I am grateful for the honour conferred upon me.