

René Géronimo Favaloro Pioneer of Cardiac Surgery

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This project is a follow up of the Historical Perspectives article entitled "Memento for René Favaloro" (Captur G. Tex Heart Inst J 2004;31:47-60) which appeared in the March issue of the Texas Heart Institute Journal in 2004. It was the winning essay of the 2003 Texas Heart Institute Award for Undergraduate Writing in the History of Cardiovascular Medicine and Surgery.

Abstract

Dr. René G. Favaloro moved to the Cleveland Clinic in 1962 and proceeded to reshape the face of cardiac surgery as we knew it. Together with his colleagues at the Cleveland Clinic, Drs. Effler, Sones, Proudfit, Groves, Sheldon and countless others, he contributed to the double internal mammary artery-myocardial implantation by the Vineberg method, and by May 1967, he reconstructed the right coronary artery by the saphenous vein graft interposition. These landmark procedures paved the way for the aorto-coronary saphenous vein bypass graft in October 1967. Many similar breakthroughs ensued, with the application of the bypass technique to the left coronary artery, the combination of coronary artery bypass graft with left ventricular reconstruction and valve repair/replacement and finally, by December, a double bypass to the right coronary artery and anterior descending branch of the left coronary artery.

In June, 1971, Dr. Favaloro decided to leave the Cleveland Clinic and return to Argentina where he created a medical centre, a teaching unit, a research department and finally an Institute of Cardiology and Cardiovascular Surgery. This was his greatest personal ambition.

Over and above his brilliant mind and craft, Dr. Favaloro was a man of integrity, courage, honesty and humility, whose name will never cease to reverberate throughout the history of medicine.

Key Words

Argentina; history of medicine; 20th cent; myocardial revascularization/ history; coronary artery bypass/ history; heart valve disease.

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"For you to find the truth, in the first place, you have to believe in the truth with all your heart and with all your soul, and believing in the truth with all your heart and with all your soul means saying what you think wherever and whenever, but most especially, at the least opportune moment (...)"¹

Miguel de Unamuno

The character of Dr. Favaloro is exquisitely embodied in these lines.

René Géronimo Favaloro (Figure 1) was born in the city of La Plata, capital of the province of Buenos Aires, the federal capital of the Argentine Republic. He was the grandson of Italian immigrants: his father was a cabinet-maker; and his mother a dressmaker.²

Dr. Favaloro received his secondary education in the famous Colegio Nacional de La Plata, which in those days was staffed by some of the most outstanding minds in Latin America, including Ezequiel Martínez Estrada and Pedro Henríquez Ureña.³



Figure 1: Dr. René Geronimo Favaloro (1923-2000).

This photograph was taken at a symposium held in Cleveland sponsored by the clinic's Thoracic & Cardiovascular Surgery Department on November 12-13, 1992 to celebrate the 25th anniversary of Dr. Favaloro's pioneering coronary artery bypass graft at the Cleveland Clinic.

(Photo courtesy of the Cleveland Clinic Foundation.)

“The University of La Plata was deeply involved in secondary education, understanding that in this stage of youth could be found the key and the basis for the moulding of the future man.⁴”

He graduated from high school in the upper third of his class and then commenced his studies in the Medical Science faculty of La Plata University² in 1941, together with another hundred and twenty students³. He presented his thesis and graduated at the top of his class in 1948, with the title of Doctor in Medicine.

In the course of his studies Dr. Favaloro had begun to foster a profound interest in thoracic surgery. The time was ripe for Dr. Favaloro to develop a career as a distinguished thoracic surgeon but the political climate which prevailed at the time, led him to a different path.

“After my graduation, I became a country doctor in the small village of Jacinto Ar-uz in the southwest of La Pampas. With the help of my younger brother, who was also a doctor, we turned an old house into a clinic, which became the only surgical centre in that area. Thousands of patients were operated on during the first 12 years of my practice ...I still remember the beautiful babies I delivered, mostly at night, illuminated by a kerosene lamp. I was following the basic principle that I had been taught at my university- that every graduate has a social commitment.²”

In 1950, he married his beloved María Antonia (Figure 2) in La Plata. She was to become his lifelong source of courage and comfort.

Cleveland Beckons

By 1960, Dr. Favaloro began to cherish the idea of travelling to the United States to train in thoracic and cardiovascular surgery. His mentor, Professor Mainetti¹, confidently recommended Cleveland Clinic in Ohio, so that in February 1962, Dr. Favaloro visited the clinic, accompanied by his wife, arriving unannounced.*



Figure 2: René Favaloro (far right) together with his wife, María Antonia (far left), and his parents (in the centre).
(Photo courtesy of the Favaloro Foundation.)

At the time the Department of Thoracic Surgery consisted of Dr. Donald B. Effler (Figure 3), and his partner, Dr. Laurence K. Groves in addition to a senior and junior resident.⁵

Dr. Effler appeared willing to accept Favaloro as a special trainee*.

“In my broken English I managed to explain the reason for my trip. Effler made it clear that not having the proper qualifications, mainly the certificate of the Educational Council of Foreign Medical Graduates, I could only be accepted as an observer, without receiving any payment. Because I had been able to save money, I pointed out that I was not asking for a salary but for an opportunity to learn.¹”

From the very start, Dr. Favaloro was drawn to the work of Dr. Mason Sones Jr. (Figure 4), and his collaborators in the cardiac catheterisation laboratory (the famous B₁₀) located in the basement of the Cleveland Clinic.⁶

“I spent most of my time in B₁₀. I had rented a small apartment across the street. Living so close to the clinic, first, spared me from travelling through the streets and roads covered with snow during most of



Figure 3: Drs. Favaloro and Effler in the Operating Room circa 1971. Dr. Effler donated this photograph to Dr. Favaloro after the latter submitted his resignation from Cleveland Clinic in 1971. He added a dedication to the photo which read: “We have taught each other many things”.

(Photo courtesy of the Favaloro Foundation, from the *Journal of Thoracic and Cardiovascular Surgery*, 58(2):178-185, Favaloro RG, with permission from the American Association for Thoracic Surgery.)

the winter in the Ohio Great Lakes area, and second, it allowed me to prolong the review of the films in the evening and sometimes until late at night.¹⁷

Dr. Favaloro became a junior fellow in 1963 and a senior resident by 1964.*

Just prior to Dr. Favaloro's arrival at the Cleveland clinic in 1962, two important events had already taken place. Firstly, on 5 January 1962, Dr. Effler and his associates had successfully operated on a severe obstruction at the left main coronary artery⁷ using the patch graft technique described by Åke Senning.⁸ The first patch operations were produced using a pericardial graft to enlarge the lumen of the left main coronary artery.

Secondly, on 12 January 1962, Dr. Sones examined a patient who had been operated upon by means of the Vineberg procedure in Canada (first described in 1946).^{*} Using selective cannulation of the left internal mammary artery he showed that



Figure 4: Dr. Favaloro with Dr. Mason Sones Jr. Dr. Favaloro always had a kind word for his dear friend. "...Mason Sones being the indisputable leader. I have always thanked God for having given me the opportunity to share my duties with him."¹⁷ Dr. Favaloro visited the Cleveland Clinic several times after his departure; perhaps the most important of these trips was in 1985, when Mason Sones was dying of bronchogenic carcinoma.⁵

(Photo courtesy of the Favaloro Foundation, from the *Journal of Thoracic and Cardiovascular Surgery*, 58(2):178-185, Favaloro RG, with permission from the American Association for Thoracic Surgery.)

collateral circulation from the systemic artery implanted into the myocardium was sufficient to increase the myocardial perfusion in the territory of an occluded left anterior descending coronary artery.

Therefore, by 1962, myocardial revascularization had started with both a direct approach in localised proximal obstructions with the patch graft technique (pericardium or saphenous vein) and also with an indirect approach with the left internal mammary artery implant. In the light of this, Dr. Effler and the Cleveland Clinic were very strongly motivated towards a surgical solution to coronary artery disease at the time Dr. Favaloro joined the team.*

Direct myocardial revascularization by the pericardial or venous patch-graft technique^{9,10} was yielding good results on the right coronary artery but not with left main trunk obstruction¹¹ where 11 deaths out of a total of 14 patients, was reported.⁵

"In those years, I used to go to the operating room with both the thrill of challenge and fear in my soul. Sometimes when the kidney transplantation team was desperately looking for a donor and they saw in the surgical schedule that such a patient was ready to undergo surgery once more, they would come and ask permission to perform a crossmatch before the operation."¹⁷

The greatest limitation of this patch-graft technique lay in the coronary artery remaining untouched, so that the inner surface retained irregularities that could disturb the flow pattern*. The turbulence induced thrombosis and consequent occlusion.

"Early in 1967, I thought that perhaps the problem could be solved by use of segments of saphenous vein. At the Cleveland Clinic, we had gathered a broad experience in peripheral and renal artery reconstruction with that kind of graft. Why not use it at the coronary level?"

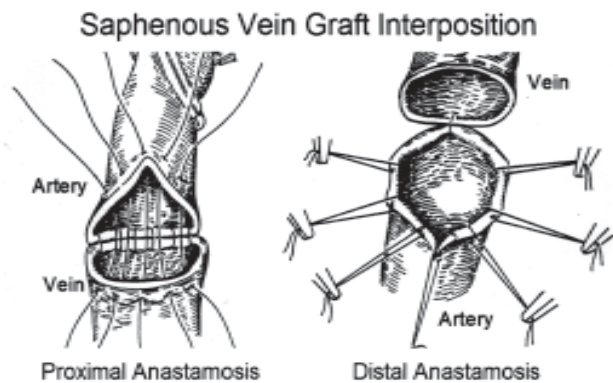


Figure 5: The Principle of Saphenous Vein Graft Interposition. The stitches on the anterior aspect of the anastomosis are placed without being tied. This manoeuvre prevents improper position of the sutures.

The first such operation was performed on 7 May, 1967 on a 51-year-old woman and consisted of a right coronary artery reconstruction by the saphenous vein graft interposition¹² (Figure 5).

Shortly after, the concept of aorto-coronary saphenous vein bypass grafting gained ground (Figure 6). A bypass from the anterolateral wall of the aorta to the distal end of a resected segment of the right coronary artery, using an end-to-end anastomosis was initially attempted in a series of patients, before this was changed to an end-to-side anastomosis with the coronary distal to the blockage.⁵

A self-retaining retractor, was designed by Dr. Favaloro, during this time. With some modifications, is still used today in cardiovascular centres all over the world and goes by the name of the Favaloro Retractor.⁵

In 1968 coronary artery bypass graft was combined with left ventricular reconstruction (aneurysmectomy or scar tissue resection¹³) and with concomitant valve repair/replacement.¹⁴ In December of the same year, a double bypass to the right coronary artery and LAD was performed, thus opening the door to multiple bypass approaches in patients with multiple vessel obstructions.

In 1970, Dr. Donald Ross invited Dr Favaloro to perform some operations at the National Heart Hospital in London.¹ With the help of Dr. Ross, Dr. Favaloro in fact, carried out the first coronary artery bypass in England.

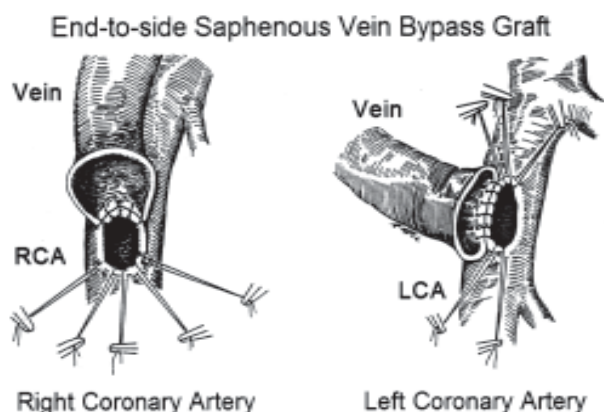


Figure 6: *The Principle of Saphenous Vein Bypass Grafting. The distal end-to-side anastomosis starts on the upper portion from the right coronary artery. For the left coronary artery, the anastomosis starts on the medial side. Notice that interrupted stitches are placed before beginning the anastomosis on the distal portion of the right coronary artery and proximal and distal portions of the left coronary artery.*

(Taken from the *Journal of Thoracic and Cardiovascular Surgery*, 58(2):178-185, Favaloro RG, with permission from the American Association for Thoracic Surgery).

'You Chose The Easy Way'

This memorable era, dotted with grandiose exploits, the like of which few could have envisaged in Dr. Favaloro's life, was just about to change:

"In 1970 I decided to return to my home country. It was a difficult decision. I gave serious thought to this matter and finally considered that my work and my duties were needed in Latin America. One day in October, late in the afternoon, I wrote my letter of resignation to Effler. I closed the envelope with tears in my eyes and left it on his desk. I wrote: '...as you know, there is no real cardiovascular surgery in Buenos Aires ... Destiny has put on my shoulders once more a difficult task. I am going to dedicate the last one third of my life to build a thoracic and cardiovascular centre in Buenos Aires. At this particular time, the circumstances indicate that I am the only one with the possibility of doing it ... Money is not the reason for my departure. If that would be the main issue, I would take into consideration the offers made constantly to me from different places inside the U.S.A. The main purpose is to develop a well-organized service where I can train surgeons for the future. I know all the difficulties involved because I have practised before in

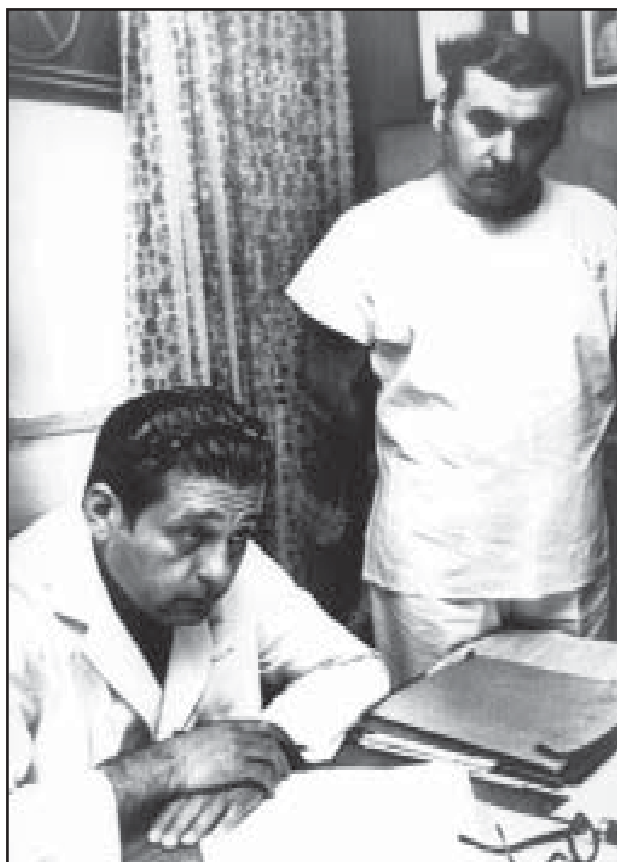


Figure 7: *Dr. Favaloro with his brother Juan José Favaloro. Photo taken at the Sanatorium Gemes. (Photo courtesy of the Favaloro Foundation).*

Argentina. At age 47, the logical and realistic resolution would be to remain at the Cleveland Clinic. I know I am taking the difficult road. You might remember Don Quixote was Spanish. If I do not accept the position as Head of that department in Buenos Aires, I will be living the rest of my life thinking of myself as a good solid s. of a b.. My conscience would constantly be telling me, 'You chose the easy way'.⁴

Departing from the Cleveland Clinic and his beloved colleagues there, was a momentous task.

"My big problem was Mason. It was impossible for him to accept that I would break our common work and brotherhood. Repeatedly he tried to convince me of my 'mistake'. The last 3 months were dreadful. Even though I may look like a strong and commanding surgeon, deep in my soul I am an extremely sensitive fellow."¹

Staff from all over the Cleveland Clinic, nurses and technicians alike, beckoned him to stay.

"Finally I decided to escape. I told everybody I was leaving at the end of June or the beginning of July. However, I accepted an invitation to lecture in Boston in the middle of June, and from there my wife and I left for Argentina ... I wrote letters to Effler and Sones. Effler accepted my decision, which 'avoided a painful goodbye or farewell.' Mason, once again, thought I was crazy."¹

Dr. Favaloro was welcomed warmly in Argentina as a famous surgeon and soon became a local hero. He initially worked as Chief of Thoracic and Cardiovascular Surgery at a hospital called the Sanatorium Güemes, that was a general surgical clinic. Dr Favaloro's brother, Juan José (Figure 7), worked with him at the Sanatorium Güemes from 1971 till 1976; the year of his death in a tragic accident.* After this time Dr. Favaloro became the surrogate father to his brother's four children, two of whom became physicians.* Dr Favaloro and his brother, together created the Favaloro Foundation in 1975.

His long awaited research department was made possible in 1978.² In 1980, Dr. Favaloro and his team carried out the first heart transplant with long survival in Argentina and in the same year he also succeeded in establishing a medical centre and a teaching unit, both located in the Sanatorium Güemes.

Dr. Favaloro resisted every attempt to draft him for high political office, but instead sought to amass the funds necessary for the construction of the Institute of Cardiology and Cardiovascular Surgery.¹⁵ More than ten long years of sacrifice, a piece of land borrowed from the town council, and several loans, one of them from the International Development Bank, were necessary to finish it.[#] The building was inaugurated on the 2nd June 1992 with the motto:

"Advanced technology at the service of medical humanism".

Dr. Favaloro battled all odds to create the Institute and the results he achieved were awe-inspiring:

"At the Cleveland Clinic I always worked on a very modest salary, turning down innumerable profitable offers from private organizations. Approximately 25% of the patients operated upon in our Institute of Cardiology and Cardiovascular Surgery in Buenos Aires have no insurance or social protection. We provide them with the same medical assistance and facilities as we do for everybody else."¹

By 1999, no fewer than 400 cardiologists and cardiovascular surgeons had been trained in the Favaloro Foundation, witnesses to the enormous bravery and generosity of this one man.⁴

The Favaloro Foundation was designed to thrive upon those ten fundamental principles which Dr. Favaloro clung to, at all times, himself[#]:

1. Honesty.
2. Work with passion, effort and unlimited self-sacrifice.
3. Avoid being influenced by dogmatic concepts or prejudices arising personally or suggested by others.
4. An individual's contribution will be of value only if it arises from his free will, exercised without external influences or limitations.
5. Never stray from a strictly ethical attitude.
6. Teamwork is vital. This demands humility.
7. Every action should be directed towards the truth and nothing more than the truth. One should speak one's inner thoughts out loudly. Nothing can be constructed on lies.
8. If in addition to relieving the suffering of our fellow-man we can enrich our knowledge, then our satisfaction will be doubled.
9. Our work is directed towards the patient. Consequently he is the only person to be permitted privileges.
10. We can only enjoy the accomplishment of our work when we realize, preferably in those moments of personal reflection, that the only true prize is that gained from the spiritual pleasure of a duty well done.[#]

Dr. Favaloro regularly featured on the local media and voiced his opinion on matters which listeners may not have been particularly willing to hear in the way of social commentary¹⁵. Despite his unorthodox Sicilian ways his popularity blossomed relentlessly and he never ceased to intrigue and mesmerise with his outstanding teaching skills.

He was an active member of the National Commission on the Disappearance of Persons (CONADEP), which was established after the restoration of democracy in Argentina. It was chartered to investigate the fates of thousands who disappeared during the junta rule.[#]

Dr. Favaloro was nominated for and received innumerable highly coveted accolades and international awards, and belonged to numerous honorary and scientific societies.

He spent his last few years living modestly in Buenos Aires.

And Death Will Have No Dominion

A great institution like the Favaloro Foundation required a budget equal in greatness to maintain it. In the midst of a good economy this was of little concern, but in the late 1990s, when Argentina's economic standing turned sour, the magnitude of the problem became all too clear. Besides, a subsidy that had been passed by the Argentine National Congress was discontinued in 1998.[#] At the age of 77, Dr. Favaloro was faced with tremendous losses due to default in payments from province-owned and state-owned[#] health insurance programs¹⁵, estimated at around \$18 million. The only hope of survival for the Favaloro Foundation lay in the possibility of making redundant a sizeable number of people, an option which Dr. Favaloro flatly rejected.[#] In the last years of his life, at a time when he ought to have begun reaping the benefits of decades of relentless and dedicated work, he was instead compelled to vie for additional financial help.[#] He tried desperately to rectify the situation and salvage that Foundation, which had become his very soul. A week before his death, he wrote letters to businessmen, colleagues and to the President of Argentina[#], pleading for the payment of government debts to his institute.¹⁵ But it was to no avail.

The struggle was over. On July 29, of the year 2000, Dr. Favaloro at the age of 77, died by his own hand, according to official reports.

News of Dr. Favaloro's demise spread as a shock wave across Latin America, the United States and further still. The world's medical community was suddenly bereft of a singular breed of humankind that was Dr. Favaloro; it was dumbfounded and could not come to terms with the magnitude of such a loss.

As a surgeon Dr. Favaloro, will be remembered for his ingenuity and imagination; but as a man he will be remembered for his compassion and selflessness.¹⁶

Today his treasured Institute in Argentina lives on; a timeless memento to its colossal founder. After the death of Dr. Favaloro, a new board of directors saved the foundation through restructuring of management, layoffs, and fund-raising.[#] Although private companies initially did not reply to the Foundation's request for help and De La Rúa's government alleged that "The Favaloro Foundation was not a viable project", it finally succeeded to make ends meet.[#] Another crisis came with the Argentine economic default in December 2001, but that too passed.

Dr. Favaloro infused his passion for science, medicine and social justice into all those who were fortunate enough to have met him. His contributions to cardiac surgery will always bear that extra weight because they were bestowed upon us by a giant

who had the courage to shake deep rooted systems and brandish his fist in front of suffering.

The pulsating elixir of life which he pumped into the sickest and most battered of hearts will never be extinguished, but that precious part of him which has been, shall be sorely missed by many.

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