

Tribute to Professor Arturo F. Montagu

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Professor Arturo Montagu passed away on 8th April, 2005, after a five-year long courageous battle against cancer. Arturo was one of the world's pioneers in architectural computing whose work and teaching influenced generations of professional and researchers, in Latin-America and beyond. It was through him that SIGraDi was created and that many of today's relationships among people in the architectural computing community got started and thrived. Despite his illness, he continued working unabatedly until the very end. In fact, few people ever noticed that he was sick. The sheer force of his intellectual activity for a long period of time in the 20th century – dense and valuable like few in architectural computing – and his invincible spirit hid the marks of his illness for a long time. This article summarizes Professor Montagu's contributions to the field of architectural computing and includes tributes from four people who knew him well but through very different circumstances.

I. His Origins

Arturo Montagu was a multifaceted professional with a shining personality who lived in an era dominated by the arrival of great technological innovations. There are many possible angles from which to attempt to evoke his contributions. We could make reference to his work as a scientist or teacher, or to his legacy as a human being.

Although retired as a Professor of the Universidad de Buenos Aires Faculty of Architecture, Design and Urbanism, Arturo kept on working until the end, teaching his 'legendary' class "Multimedia Representation in Architecture and Design" [1] and engaged in several research projects.

He inherited from his father – an English sailor whose ship was torpedoed twice during the WWII and whom Arturo admired but didn't see very much because of his job related absences – a curious spirit that pushed him to search beyond the horizon.

His vocation for architecture was born during the last year of secondary school, while doing an assignment that was evaluated by the office of one of the most influential architects of the time.

As an architecture student, he worked under the guidance of Professor Gaston Breyer, who asked him to extend his studies to Philosophy, the Arts and other disciplines. This provided Arturo with a life-long passion for and knowledge of culture in all its manifestations. For Breyer, Arturo Montagu was a "very focused, independent, sensitive if not romantic, hard working and intelligent man. Despite his clear 'porteño' profile (native of Buenos Aires), Montagu had the English gentleman strongly rooted within him due to, no doubt, his father's influence."

Professor Montagu was shaped by public education and the Argentinean University life ruled by the "University Act of 1918". He always and wholeheartedly defended both institutions. He believed in equality and democracy. It is not necessary to mention what he deeply despised. He fought dictatorships and authoritarianism, whatever their forms. As a result, he had to leave not only the university (in 1966 and again 1976) but also his country during the ruling of military junta governments in Argentina.

2. His studies abroad

The first period of study came about in 1966, after the visit of Finish designer Ilmari Tapiovaara (1914–1999) to Buenos Aires who invited Arturo to do an internship at the office of one of the 'great' moderns, Alvar Aalto. From this experience, which he always recounted with pride, Professor Montagu acquired his keen sensibility and appreciation for design refinement.

Back in Argentina, he found himself in a political environment not conducive to his development and therefore soon left for Great Britain, under the sponsorship of a British Council of Cultural Relationships fellowship.

He began his studies at the Architectural Association of London under the direction of Will Redpath. He then moved to the Institute of Technology's Department of Building at the University of Manchester where he worked under the direction of Professor Dennis Harper. During this time, Arturo focused on problems associated with 'design methodologies' that were headed by John Christopher Jones. It was this work with Professor Jones on General Systems Theory that gave birth to his life long commitment to computer aided architectural design and allowed him to begin his ground breaking work in CAAD in Argentina in the early 1970s.

During his stay in England, and following a request from the Design Department of the National Building Agency (Ministry of Public Buildings and Works), Arturo developed one of the first Computer Aided Drafting and Design systems. This work, termed "The D-Mac-Graphomat System", was recognized by the Royal Institute of British Architects in 1968 with the prestigious Applied Research Award for its contribution to "the application of computer aided graphical processes in the field of industrialized building". In addition to the decisive influence of J.C. Jones on approaching specific tasks in computer aided drawing, Arturo was also affected by his interactions with the Department of Design Research at the Royal College of Art in London that was directed at the time by Bruce Archer, as well as the seminars offered by the Design Research Society and a Symposium at Portsmouth organized by Geoffrey Broadbent in 1968.

Several years later, in the prologue to a Spanish edition of his book "Design Methods", J.C. Jones would say

"... I remember with satisfaction my many Spanish speaking students, all of them good friends, that came to study design methods here in Great Britain, and in particular of Argentinean Arturo Montagu, who suggested to me that I write this introduction."

After his experience in Europe, Arturo returned to Argentina in 1969, where he had to struggle for a long time to get the new CAAD discipline accepted. His enthusiasm was not understood; his colleagues did not grasp the impact and signification of CAAD with the same anticipation as he did. Thus, during the seventies, the Faculty of Architecture at the Universidad de Buenos Aires (UBA) rejected his revolutionary ideas which, in remarkable contrast, were well received by the Faculty of Exact Sciences at the same university.

It was in this very Faculty where I became his student. I was studying Computer Science, another new discipline in Argentina at the time. From that moment on, we walked together a long path characterized by a deep love for each other. Indeed, I could say that it was love and computers that brought us together.

► Figure 1: Professor Arturo F. Montagu delivering a panel lecture at a SIGraDi Conference.



3. His legacy

A detailed presentation of Arturo Montagu's work over more than 30 years is presented in his book "*Desde la Computación Gráfica a los Sistemas CAD actuales. Una Visión Histórica de la Revolución Producida en los Sistemas de Representación Gráfica (1966-1996)*" – Centro CAO (editor), Buenos Aires: Universidad de Buenos Aires, 1997 [2]. This book goes through Arturo's continuous and focused (re)search for new design and graphic methods based on the use of digital computers (initially, there also were mechanical computers), as well as the people, projects, and books that most influenced him over those years.

The starting point in this journey was in 1965, mostly in Argentina and Great Britain, continued in the United States in 1970-71, and later in France in 1974. His first insight came about in 1965 as a result of his intellectual combination of basic concepts of descriptive geometry with generative systems of geometric shapes (which he taught in a class lead by professor Gaston Breyer) after observing the demonstration of the then alien concept of “automatic drafting” on the first scientific computer available at UBA. Arturo always referred to this insight as a profound understanding of the need to integrate ideas and elements from two different “realms”: the analog world (manual graphics and design) and what at that time was by and large unknown digital world. Needless is to say that this vision encountered strong resistance from the architectural status-quo as most academics and professionals were ignorant and negatively suspicious about the new media.

Arturo’s area of interest centered in the graphic results that could be attained through the rough printing of the time. In other words, from the very beginning, he saw computers as ‘graphic instruments’ to support human driven design and not as tools for producing design via algorithmic programming. Professor Montagu used to put it this way:

“I definitely entered the world of computing in 1965 with the intention of investigating design methods and automatic drawing, while tightly holding the Fortran IV manual on my hands.”

3.1 The investigator

Arturo was invited to join Argentina’s renowned National Council of Scientific and Technological Research (CONICET) as an Investigator by its then president Dr. Bernardo Houssay (1947 Nobel Prize in Medicine). He remained as an active CONICET researcher for the next 30 years until his death.

In this organization, he conducted multiple and ambitious projects such as:

1. Geometric Heuristic Model for Design Applications to Urban Renewal: Application to the Development of the South Area of Buenos Aires. (1971–1972).
2. Computer Design and Modeling of an Experimental House Scheme for 10 Dwellings Using the Theory of Urban Supports of MIT Professor Nicholas Habraken (1980-1982).
3. Computer Aided Urban Design Procedures for the Design of the Future New Capital City of Argentina (1986-1989).
4. Experimental Computer Modeling of the Design Proposal for the Old Buenos Aires Harbor. (Project Architect: Clorindo Testa) (1991–1992).

5. DatArq: Hypermedia Database of Modern and Contemporary Architecture (1994–2005). [3]
6. Urbamedia: Urban Database of Central Districts of Argentinean Cities (2003–2005).

3.2 The CAO

Between 1976 and 1984, Arturo Montagu had to leave the public university due to political reasons. The arrival of democracy brought him back to academic life. Since that moment, he commenced a long and hard journey focused on the transformation of the UBA Faculty of Architecture, Design and Urbanism (FADU) into what he called the “digital FADU”. Ever since its institutional reorganization in 1984, Arturo played a very important role in the introduction of information technologies in the teaching of architecture, urbanism and design.

In 1985, Montagu competitively won the ‘Associated Professor of Architecture’ faculty position which enabled him to direct an architectural studio totally oriented towards Computer Aided Design. This was one of his great accomplishments. Still, his studio was not popular at the time. He never had more than 30 enrolled students in contrast to the 300-400 registered in the studios lead by architects better known by the students.

Four years later, in 1989, the Center for Computer Aided Creation (Creación Asistida por Ordenador or CAO in Spanish) was formed thanks to a major grant by the Swiss government obtained by the FADU Dean. Professor Montagu’s participation was essential for its growth and development. It was Arturo’s vision, work, and leadership that turned the CAO into the world-class information laboratory that we know today. [4]

3.3 SIGraDi

Starting in 1996, and after conversations with colleagues of several universities in Argentina, Arturo began envisioning the creation of a space for sharing and discussing the creative, scientific, expressive, and technical possibilities of computer graphics. He knew that he could realize this idea because he had the support of many research and professional groups in the country and a majority of Latin American nations. In some ways, the creation of CAO had contributed to speeding up the consolidation of architectural computing groups in many schools of architecture in the region.

The next step thus came out naturally in June 1997. With the strong backing of CAO members as well as Argentinean and Latin American academic volunteers and without any financial resources, Arturo lead the organization of the “First Seminar on Digital Graphics”. The overwhelming response in terms of number of participants and the quality and variety of work presented made the meeting an immediate success. Indeed, the synergy collected over the seminar’s three days naturally ‘erupted’ at the

end and gave birth to SIGraDi, the *Sociedad Iberoamericana de Gráfica Digital* (Iberoamerican Society of Digital Graphics), as an interdisciplinary organization focused on the use of digital graphics as the means to map the evolution of contemporary knowledge. Arturo was its father and deserving first President.

4. The human being

Arturo mainly was a man committed to the defense of a very wide, inclusive, dialogical, and optimistic vision of the world. Remembering him necessarily means to make reference to his belief in youth as the source of all hopeful innovation and progress. No matter where he taught, it was young people who captured his imagination, passionate dedication, and full attention. Throughout his career, Professor Montagu devoted much of his time to inform and advise young people. In his regular meetings with them, he selflessly shared his love for life, work, and knowledge.

Arturo was a path maker and 'inspirator', never a detached ideologue. Walking along those new roads, he would make friends that followed him in the conviction that the objectives pursued were important and the direction set sound. It is for this reason that I would like to share this tribute with four people that knew him from different perspectives: Arturo and Argentinean architect Juan Manuel Boggio Videla were united by a passion for architecture, the great architects of our time, the use of CAD in architecture, and simply friendship. Vienna University of Technology Professor Bob Martens knew Arturo since 1998 through short, multiple and intense interactions in conferences on architectural computing. The Scottish Professor Tom Maver, from the University of Strathclyde, first met Arturo in the UK in the early 70's, an acquaintanceship which was productively renewed in 1997. Venezuelan Professor Gonzalo Vélez Jahn was the most important Latin American reference with whom, even at great physical distance for a long time (most of which without internet), he could share his interests from the very beginning of his career.

4.1 Homage by Architect Juan Manuel Boggio Videla

Arturo. So simple. Writing a name as a way to talk to oneself about the friend that we no longer see but that we know is forever present and that we feel close to us in our memory. It is said that it is most difficult to express what we love the most, and this is what happens to me regarding Arturo: it becomes near impossible to communicate in writing what is already difficult to express verbally.

I can only reminisce about all we shared, the early efforts in the beginning of computer graphics in Argentina, the conferences, conventions and symposia we attended together, the beautiful experience of the Seminar we taught at the Sao Carlos campus of the University of Sao Paulo, the joint effort to compose and refine – during long hours added to already long

workdays – our chapters in the book titled “Computer Aided Design for Engineers and Architects”, the cordial family dinners (often crowning and mitigating the writing effort) with Lilia, Haroldo, Constanza and the always effective assistance of Beatriz.

In 1978, I was principal at SADE, an architecture, engineering and construction company in Argentina. With the encouragement of its CEO, engineer Vittorio Orsi, SADE decided to take the risk of implementing a computer graphics system, a technology that was in its early stages even in the U.S. Several professionals in the staff traveled there in a marathon-like tour to select one of the available commercial systems. Once the tool was purchased, imported and installed, the need became to take the best advantage of its potential. I then remembered having read an article on computer graphics applications in Architecture by Arturo, published in *SUMMA*, a prestigious architecture journal.

I located the author through the journal office and the first contact was a phone conversation where we agreed to examine a possible exchange of our experiences. Between the initial encounter and the last time we met at the presentation of his book titled “Digital culture” in 2004 (I could never imagine that it would be our last) there is a vast expanse of shared experiences, fruitful collaboration, heartfelt admiration for his qualities as a human being and his professional accomplishments (which I do not list since they are well known) and a warm friendship, that matured and consolidated through the years.

Lately we saw each other less frequently but each encounter was as intense as ever. As it is said, distance and absence does not mean forgetting, so, I can still hear his affectionate greeting: “How are you doing, *pichón*?^{*}”

A few days ago, Lilia asked me for some thoughts to add to her portrayal of Arturo in his memory.

May be these lines cannot show the depth of my feelings, scattered and touching as they come to my mind, but they surely are my little contribution to comply with her request, certainly in a lesser manner than Arturo would deserve.

Note: Juan Manuel Boggio Videla is Vice President of “Integral Computación S.A.” in Buenos Aires, Argentina.

4.2 Homage by Professor Tom Maver

I first met Arturo Montagu in the 1970's while he was working with Professor J.C. Jones at the University of Manchester. We shared an intense interest in the emerging discipline of design methodology and, more specifically, how the new digital technologies might impact on the complex human activity of design.

^{*} In Argentinean colloquial Spanish, “pichón” means a bird's baby, and the word is used extensively for people, something that is close to “dear little kid” in English.

We lost contact when Arturo returned to Argentina but, to my great delight (and somewhat by chance) we were re-united in 1997 and able to compare, and share, our experiences over the preceding quarter of a century.

The parallels between the development of the subject area in Latin America and Europe, and in our own personal careers, were quite remarkable. We had both experienced the skepticism, even antagonism, of practitioners and fellow academics to the evolving information technologies; we had both set up research and development units – CAO in Buenos Aires and ABACUS in Glasgow – to advance the subject; and we had both been instrumental in establishing international networks – SIGRADI in Latin America and eCAADe in Europe - to foster communication and collaboration in the community of teachers and researchers. It has been my privilege to participate in a number of the highly successful SiGraDi Conferences and an even greater privilege to have had Arturo's participation in a number of eCAADe Conferences.

Arturo's contribution to the field – internationally – is of the greatest significance and will be long remembered in the CAAD community. But equally, the man himself will be long remembered for his humanity – a gentle, unassuming, generous academic, who was, and remains, an inspiration to students and colleagues around the world.

Note: Tom Maver, Emeritus Professor at the University of Strathclyde, in Scotland, has lead ABACUS (Architecture and Building Aids Computer Unit, Strathclyde) since 1969. He is a pioneer in architectural computing research and education and was one of the founding members of eCAADe and CAAD Futures.

4.3 Homage by Bob Martens

On the occasion of the eCAADe 2003 conference in Graz, Arturo Montagu gave a very memorable presentation in the framework of a special session dedicated to the retirement of Tom Maver. It turned out to be a meeting of pioneers of CAAD and Arturo talked about his view of the early stages of this field.

Two years earlier Arturo visited Helsinki, where he attended the eCAADe 2001 conference. During this visit he returned to the places where he had been working as a young designer in the sixties; both for Alvar Aalto and for the Finnish interior designer Ilmari Tapiovaara.

Linking up people within the CAAD community was always on Arturo's agenda. He acted as the founder of the SIGraDi-community (1997) and set up stable bilateral relations with other CAAD-associations. He never spared time or energy in relating to different people face to face. His CAO, school, class, and even his home were always open to any member of the international CAAD community visiting his beloved Buenos Aires. He was always open and honestly interested in other ideas, techniques, disciplines,

and works no matter how different or contradictory they were to his own. He was a tremendous role model for scores of young architectural researchers and practitioners in South America and beyond. The world of architectural computing, all of us, will miss him dearly.

Note: Bob Martens is an Associate Professor at Vienna University of Technology. His current research interest is focusing on Electronic Publishing and Knowledge Management. In this framework the Cumulative Index on CAD [5] was setup. Recently he has been appointed as Vice-Dean of Studies related to continuing education activities (postgraduate courses).

4.4 Homage by Professor Gonzalo Velez Jahn

Arturo Montagu occupies a position of the highest importance in the history of computational graphics in Latin America. A visionary man with great knowledge of information technology, he was a tireless strategist, developer and promoter of digital graphics. Father of SIGraDi, now a recognized world-class broker of knowledge in architectural computing, Arturo determinedly fought for his ideals no matter what intellectual barriers, political resistance, bureaucratic encumbrances, or physical distances he had to overcome.

At the personal level, he was a great friend, always cordial, always optimistic, always easy to get along with, and always enthusiastic.

In Venezuela, we are left with the memory of his remarkable visits to Caracas and Maracaibo. I will only add that his keynote speech at the First Venezuelan Conference of Computer Applications in Architecture (Caracas, 1999) elicited a spontaneous standing ovation, an extraordinary and very rare recognition that only very, very few have ever received at our School of Architecture.

Goodbye, dear friend Arturo. Life passes by but our realizations, contributions, example, and memory remain and grow roots. For all those that had the privilege to know him, Arturo Montagu was a great researcher, academic and friend. But, best of all, he was a good man. I would like to send to his inseparable and dedicated companion wife Lilia as well as his loving children my heartfelt condolence.

Note: Architect Gonzalo Vélez Jahn is full professor and founder of the Laboratory of Advanced Technology in Design at the Universidad Central de Venezuela Faculty of Architecture and Urbanism, in Caracas.

5. Final words

There is no doubt that the parting of Arturo Montagu has left a big empty space in architecture. But more so in digital graphics, a field that, as said, he passionately dedicated his whole life and whose influence inspired and set the course of several generations of researchers and practitioners across nations and disciplines. In the end, we can conclude that, ultimately, Arturo was a great teacher. And it is through this most selfless giving and its effects

on people that his thought and work will live on and flower well beyond his physical life. To us, his family, he had left us his eternal love.

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