Short Tribute to Professor Pierre Lelong

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I first met Pierre Lelong during a conference on Several Complex Variables at the University of Maryland in the summer of 1970. The Vietnam war was in progress, there was turmoil within the Universities, unusual alliances and searching passionate philosophical and political debates between professors, among students, and in groups containing students and professors were taking place, the Gestetner was the standard copying machine, Xerox was a company and not a verb, the monthly appearance of the Mathematical Reviews were eagerly anticipated and communication took place at seminars, conferences and in longhand. I was a freshly minted Ph.D. and Pierre was, although I didn't know it at the time, close to sixty and a very important mathematician. I introduced myself, having been instructed to do so by my thesis advisor Leopoldo Nachbin, and although his English and my French were both, shall we say, laboured, he was friendly and talkative and we managed to communicate and keep communicating, without misunderstanding as far as I am aware, for over thirty years at conferences, meetings and private visits in the US, Brazil, Paris and Dublin. He visited Ireland as a tourist twice and enjoyed the music (it's different he said), the weather (it's also different), the driving (it's very different), the food (it's unusual) and the

English (it's just like your's he said).

My memories may now be rose tinted but looking back I remember it as a time of great courtesy, tolerance and excitement where all were listened to, no matter what their views. The senior established mathematicians of that era will long be remembered for their mathematical creativity but it should not be forgotten that they were also unbelievably kind and encouraging to younger mathematicians. They invited them to their seminars, they set up contacts between their students, they showed them how to organise and today mathematics, even though still numerically small as a discipline, retains its strong social tradition.

Pierre Lelong and Séminaire Pierre Lelong, afterwards Séminaire Pierre Lelong-Henri Skoda, played, during the nineteen seventies, a crucial role for all who were interested in infinite dimensional complex analysis. It was there we met a generation of mathematicians who were beginning to work in this relatively new area: the students of Lelong, Hervé, and Cartan; people like G. Coeuré, J.-F. Colombeau, Ph. Noverraz, A. Hirschowitz, J.-P Ramis, C. Houzel, P. Raboin, P. Mazet, J.-P. Vigué, and M. Schottenloher. At times we were almost overwhelmed by the calibre of the audience. Pierre had an opinion on everything but he was non-judgmental and he had great empathy and included everyone. He believed that later generations would be the real judge of current mathematics. Once when I mentioned his own interest in infinite dimensions he said:

'Back in the thirties someone complained about me saying why did I need two complex variables, why couldn't I have done with one complex variable like everyone else. It will always be that way. Listen to others but believe in

yourself.'

In English we say that certain people are *larger than life* and it is a phrase that I would apply to Pierre. He had a great sense of humour. When I asked him why French mathematicians lived so long he said:

'In the hope of getting into the Academy, that's why we have to have an Academy.'

When I asked him about a conference in Luxembourg on the History of Mathematics that he attended he replied:

'It was strange, eerie really, it was history but they often mentioned people I knew and someone even mentioned me. Am I that old?'

He was not above making fun of himself.

'People sometimes say that I sleep during my seminar. Sometimes they're right.'

I am sure that this volume will have many articles devoted to Pierre's classical research in several variables so I will confine myself to a brief mention of his contributions and influence as they relate to my own interest: infinite dimensional theory. His finite dimensional research on plurisubharmonic functions and pseudo-convex domains were initially extended to infinite dimensions by his own students and students of Michel Hervé but afterwards he himself contributed Banach-Steinhaus type theorems, results on functions of exponential growth, and theorems relating to the construction of Green functions over infinite dimensional spaces, etc.

Pierre always had an interest in *small sets*; sets of first category, analytic sets, polar sets, negligible sets, sets of measure zero, and compact sets in infinite dimensional spaces. Motivated by discussions with Pierre,

Philippe Noverraz and myself clarified the relationship between polar subsets and translation invariant Gaussian null sets in Fréchet spaces (infinite dimensional topological vector spaces do not support translation invariant Borel measures). In 1980 he published *A class of Fréchet complex spaces in which the bounded sets are* **C** *polar* and this motivated Reinhold Meise (Düsseldorf), Deitmar Vogt (Wuppertal) and myself to linearly classify the nuclear Fréchet and *DFN* spaces in which all compact sets are polar.

Pierre had fantastic energy, physical and mental. The last time I saw him was at a conference commemorating the retirement of Gerard Coeuré in Lille. Pierre was close to ninety years of age. Yet he breezed in, marched down to the podium and, without notes or a microphone, gave a passionate and articulate thirty minute oration that was clearly heard by the audience of at least two hundred.

His mental strength allowed him to delve into new research areas during his seventies and eighties and in this he is a role model for all senior mathematicians, and indeed for all senior citizens.