For Jacob Palis
By Sebastian Van Strien

The first I heard about Jacob Palis is when I was an undergraduate student in Groningen. Floris Takens told me that if I wanted to learn about the field of dynamical systems, I should read the book of Palis \& de Melo. At that point this book was only available in Portuguese. Fortunately, it was so well-written that it did not matter too much that I knew no Portuguese. Most of the words were clear from the mathematical context or were similar to French words. However, occasionally I needed to use a dictionary, and I still remember that I was confused when I looked up a word which in my dictionary was translated as source but in the book seemed to correspond to a sink.

A bit later I found out that Floris Takens was a very close colleague of Jacob, and that one of the world centres of dynamical systems was in Rio de Janeiro, at IMPA. As a PhD project, Floris suggested that I generalise the work of Jacob on moduli of stability. These are differentiable obstructions (in terms of eigenvalues at periodic points) against topological conjugacy of diffeomorphisms with saddles whose stable and unstable invariant manifolds have non-transversal intersections.

I managed to prove something on this topic that I thought would interest Jacob, just before a meeting on dynamical systems in Warwick in 1980. Jacob Palis and also Welington de Melo were both also at this conference, and were indeed excited about what I had written. Thus my first (and only) joint paper with Jacob Palis came into existence. I remember being astonished when our handwritten notes were sent back to IMPA to be typed out, and that only a few days later the typed-up version arrived back in the post. Clearly Jacob knew how to get things done!

This joint paper resulted in my long-lasting collaboration with Welington de Melo, and many visits that I made to Rio de Janeiro and IMPA. Especially during my first trip to Rio I was overawed by this tropical country, with the huge amount of energy of its joyous people and of course the beautiful girls. At the time Brazil was still a military dictatorship and this bothered me a lot, but clearly not enough to stop coming to Brazil.

During these visits I became increasingly impressed by Jacob's extraordinary ability to do mathematics while directing IMPA. He was able one moment to discuss rather technical mathematics in depth, and the next moment deal with very detailed administrative matters. More than that, Jacob had an ability to convince the government to generously fund IMPA. Indeed, the first month of my first stay at IMPA was in the old building in the centre of Rio, and then magically IMPA moved one day to its new site in Jardim Botanico.

My memory of the old IMPA is its very charming location in a normal building in the old centre of Rio, next to the traditional juice bars with people outside changing money and selling lottery tickets. The offices in the old building were shared by many people, and pigeons were flying in the stairwells. I was impressed that Jacob was able to do such high level mathematics in this chaotic environment.

But then one day during my visit, everything including the library was moved to this new building. The top floor of this building was not yet finished, but its location in the tropical forest was incredible, with monkeys outside the balconies of the offices. The building was huge, bold and showed the extraordinary vision of Jacob had for the future development of IMPA.

It was at this moment that it hit me: Jacob is not just an ordinary mathematician who also was able to be an efficient administrator. He is a man with a vision, with an incredible charm, ability to connect to people and a unique talent to convince people that his dreams should be realised. He really cares about the well-being of PhD students, secretaries, his colleagues at IMPA but also mathematicians worldwide. He knows whether somebody has been ill, the names of their wives but also who has recently proved what mathematical result.

Some years ago he attended a conference I had organised in Warwick. I was having dinner with him, and he received on his mobile phone a message with something like "call this number to see whether you won a prize". I told him: don't respond to this, because if you call them they will want your bank account and clean you out completely. He wisely ignored my suggestion, and called the number and it turned out that he had won the Balzan prize. It was a very emotional and private moment which I witnessed. I cherish this memory: his incredible gift of doing good for mathematics was recognised by this prize.

Jacob, I love you.

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