A FRIENDLY TRIBUTE TO STAVROS KATSANEVAS

BY F. RICHARD, HIS COLLEAGUE FROM LAL-ORSAY

I am grateful to the organizers to provide me with the honour of praising the memory of Stavros, a colleague of mine who is dear to my heart, with whom I had many pleasant occasions to collaborate, to exchange ideas in physics, but not only.

Our destinies joined on the LEP experiment DELPHI, a beautiful Greek name which no doubt contributed to attract Stavros. During this period, I received the mission to coordinate the searches in that experiment and enjoyed the opportunity to interact closely with two physicists who were going to play a big part in our field: Stavros and Raynald. Both would be attracted by cosmology which I sense as a normal synergy already underlined by Blaise Pascal four centuries ago when he described the human race as caught between the two infinities.

I recall that Stavros was keen on producing generators for new physics, primarily Supersymmetry. This was the time of SUSYGEN in the nineties and we all hoped that SUSY would already show up in the LEP era. As usual Stavros manifested a great enthusiasm and talent, eager to bring the best to our community. Unfortunately, the Greek gods were not favourable to this ambition and DELPHI turned out to be primarily a precision measurement machine, which however provided us with the ability to indirectly predict the properties of undiscovered particles and at that time I recall that the most spectacular prediction was the top mass. Its discovery at Fermilab, at the right mass, has provided a new essential output of LEP: the prediction of the Higgs mass to a fair accuracy which tantalizingly coincided with the predictions of SUSY. The naïve prediction was MH<MZ which could be covered by LEP but our Japanese colleagues suggested that there could be large corrections to this

value if SUSY particles were heavy which triggered a desperate battle to raise the energy of this collider. It turned out that LEP200 missed this goal by 15 GeV, that is 7% of the beam energy… Don't forget, however, that in circular machines the corresponding increase in number of cavities needed is much faster than linear. The Tevatron came closer but did not reach sufficient significance to claim a discovery.

When the Higgs was unquestionably discovered at LHC, I recall having passionate discussions which Stavros who believed that this mass of 125 GeV was not good news for low mass scale new physics. He pointed out that this value was sitting in a region between perturbativity and stability bounds and could be extrapolated to very high scales without the need for light new physics. This is not true if one introduces the "Fine tuning" criterion.

Up to now, Stavros seems to be right but, here and there, I sense that both precision measurements and tantalizing indications from LHC experiments suggest that, fortunately, he could be wrong!

Nature has not yet said its final word about this debate.

I had another very pleasant occasion to know better Stavros. We took a trip to his homeland with the serious pretext of organizing a European network. I was treated splendidly by the famous Greek hospitality. I had also the great pleasure to meet his charming wife, Angélique. We visited, as usual, ancient monuments and, more interestingly, several sumptuous orthodox churches, accompanied by Angélique. This was the occasion to witness the usual paradox of a strong attachment to a cultural tradition and progressist ideas of a left-wing physicist…

I recall also visiting with Stavros a very large boat transformed into an exhibit hall for what is called "arte povera", another paradox in a country of triumphant traditional art. Stavros was not only a great scientist but also a very politically conscient citizen, keen on art on philosophy, fulfilling the Greek tradition where all these skills were practised 2500 years ago.

After that, our trajectories were separated, and Stavros went decidedly in the direction of the infinitely large with Virgo, where he pursued his brilliant career.

Curiously me both collaborated with Barry Barish, a major actor of LIGO/VIRGO and a prestigious leader of the International Collider project, who was able to share his efforts between the infinitely small and the infinitely large, fully aware of their connections.

Before that, he got involved in large underground detectors, like MEMPHYS, intended for neutrino physics, proton decay and super nova detection. He had, accordingly, the opportunity to manifest his vast culture in science and in technology.

From time to time, I met him at the seat of IN2P3 in Auteuil when I occasionally visited these authorities. Our last meeting was here at the APC, at the ceremony commemorating Pierre Binétruy, another sad and moving circumstance…

Let me conclude this modest tribute my conveying my warm sympathy to his family with whom I share the deep regret of having lost such a pleasant and brilliant personality.

Cher Stavros, je conserve précieusement le souvenir très present de ton bon regard intelligent.