

Eliano Pessa Tribute to Three Voices



Giordano Bruno, Franco Eugeni, and Alberto Trotta

Abstract A portrait of Eliano Pessa, in the form of thee voices tribute. Graduated in Physics, with post-graduate training at the mythical group of Professor Caianello, he became first Associate of Institutions of Mathematics, and then thanks to his systemic studies in psychology he obtained the chair of General Psychology. We briefly recall here its vast culture, its human characteristics, its propensity for dialogue, its scientific production in the most varied fields of knowledge. Finally, we like to emphasize his great love for the mountains, as soon as free from its multiple commitments has climbed the highest ones in various places in the world, demonstrating great preparation, resistance and passion.

Keywords Alpinism · Mathematics · Physics · Portrait · Psychology · Scientific interests · Teaching

1 Introduction

It is always difficult to draw a portrait of a person who is no longer there. Even more so when it comes to a friend. So, we thought of uniting our feelings towards him, in order to create a kind of three-voices singing, which would allow to describe, in some ways, not only the scientist Eliano Pessa, but also the man in its facets.

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2 Contribution of Giordano Bruno

Warm, friendly and willing to listen, despite his countless commitments both as a scientist and as a man. A man who was eager to reach new heights, not only those of his beloved mountains but also in the fields of physics, mathematics and psychology. This is how I like to remember Eliano.

When I first met him, through my good friends Bruno Rizzi and Franco Eugeni, I was fascinated by his wide knowledge and his natural kindness.

It is always a very pleasure to think back to the meetings we held in Bruno Rizzi's office, together with Franco. We discussed *number theory*, *relativity* and *quantum theory*, *non-Euclidean geometry* and several other scientific topics.

Teaching was also one of the interests we shared and valued significantly, and Mathesis, an ancient and reputable Society for mathematical and physical sciences, provided a space for it to thrive.

Indefatigable and at the same time cheerful, insatiably curious and extremely energetic, Eliano was always willing to lend a hand when it came to organizing conferences or seminars.

And then suddenly, out of the blue, whenever he could, he would vanish. "I wonder where he ended up this time", I thought and, invariably, a postcard would come after a while, from the wonderful, distant places he travelled to.

Eliano later started a fruitful collaboration with Gianfranco Minati, founder and president of the Italian Association for System Research (AIRS), contributing significantly to the organization and sharing his knowledge, the key to the scientific value of his research.

Meeting Eliano was a turning point in my life, both cultural and social, as well as an enriching personal experience.

He had introduced Alberto Trotta, who had meanwhile become my friend, to AIRS. Alberto had introduced me to Systemics and invited me to attend one of the Conferences the Association holds every 3 years—the second, if my memory serves me well. The title was "Emergence in complex cognitive, social and biological systems" and it took place in Castel Ivano (TN) in 2001.

Almost 20 years have passed since my first AIRS Conference. Since then, I have always made an effort to attend and to take part in the other initiatives the Association promotes.

Each of them is an opportunity to learn and improve among friends, and it is Eliano who I have to thank for this.

Although we saw each other rarely, our friendship and intellectual exchanges were never affected, and for this, too, I owe him.

Thank you, my friend.

3 Contribution of Franco Eugeni

I met Eliano in the early '70s, while he was still studying physics at university. He was with one of my students—back then, I used to teach Complementary Mathematics in L'Aquila—who had come to talk about his thesis. I was immediately impressed by his grasp on mathematics, a command so remarkable that we ended up preparing his friend's project together.

I met him again in the '80s, in Rome, teaching Mathematics at the Psychology Faculty. At the time, he was collaborating both with Professor Caianello's team and with my good friend Bruno Rizzi. This latter partnership produced about 20 remarkable works on applied mathematics.

In 1986, Bruno Rizzi and I had both obtained a full professorship. Together with Eliano and Luigia Berardi, we sought to broaden our intellectual and professional horizons by exchanging ideas with mathematical economists.

I remember that one day Eliano visited me in L'Aquila and I gave him one of my German shepherd's puppies.

Shortly thereafter, he moved to Pavia, where he held the chair of Psychology, a field where he excelled as much as he did in that of Mathematics.

It is quite hard to find something to say about Eliano. I remember his cheerfulness, which could sometimes puzzle those who didn't know him well, and his devotion to his many interests, which allowed him to stand out while still remaining humble and spontaneous.

I only regret not having seen him in these last 10 years.

4 Contribution of Alberto Trotta

Eliano Pessa was born in Portogruaro (Venice) on 19th September 1946, but grew up in Rieti, where his father, Professor Giuseppe Pessa, had accepted a job.

Eliano graduated in Physics at the University of L'Aquila and specialized in Astrophysics and Theoretic Physics at the University of La Sapienza, in Rome, with a thesis about "The theory of a quantized scalar field in a Bianchi I-type universe". He was associated with the FUCI (Federazione Universitaria Cattolica Italiana), chaired by Don Lorenzo Chiarelli. It was during this time that he met his future wife and started a family.

He then began teaching, first at the ITIS (State Industrial Technical Institute) in Rieti and then at the University of La Sapienza.

Physics, however, was not the only field he excelled in: while working in Rieti and Rome, he kept in touch with a local group of amateur alpinists like himself and embarked on several climbing enterprises, reaching peaks such as Vulcan Pissis (Argentine Andes, 6862 m), Vulcan Parinacota (Chilean Andes, 6342 m), Pik Lenin (Kirgizistan Pamir, 7134) and Mount Muztaghata (Chinese Pamir, 7546).

Eliano was a remarkable person, and a scientist most competent in various fields. He took on several academic positions. Between 1977 and 1987, he taught Mathematics at the University of La Sapienza, Rome, first at the “Magistero” Faculty and then at the Psychology Faculty; after that and until 2000, he taught Theory of Systems and Artificial Intelligence. Between 1992 and 2000 he was a member of the Scientific Committee of the International Institute of High Scientific Studies E.R. Caianiello, Vietri Sul Mare, Salerno. In 2000, he became Professor of Psychology at the University of Pavia, Letters Faculty; that same year, he joined the board of directors of AIRS (Italian Association for Systemic Research). Between 2002 and 2003 he taught “Modelli di Reti Neutrali” (Neural network models) at the SAFI (Scuola Avanzata di Formazione Integrata). Between 2006 and 2009 he was the Director of Interdepartmental Centre of Cognitive Science, at the University of Pavia, where, in 2010, he started teaching Cognitive Processing Models.

He was also a referee for multiple scientific journals, such as the International Journal of General Systemics and the International Journal of Theoretical Physics.

He received many acknowledgements throughout his career, such as the “Majiorana Field”, in 2008, awarding his work “Phase Transitions in Biological Matter” (Pessa, 2007).

His research dealt with a large variety of topics, combining his competence in physics and mathematics with his enthusiasm for cognitive sciences. With over 200 published works, Eliano explored the theory of quantum mechanics, neural networks, robotics, artificial intelligence, theoretical and experimental studies on long-term memory, analysis of global and local factors of visual perception, focusing and categorization process models, quantum field theory, quantum computing, quantum memory models, systemic and self-organization models in complex systems.

He also collaborated with many colleagues, such as the president of AIRS, Gianfranco Minati, former president of Mathesis Bruno Rizzi, Mario Abram and M.P. Penna.

Among the many notable works he published, we particularly mention contributions such as (Pessa, 1985a, b, 1992, 1993, 2005). Among co-authored works we mention (Minati & Pessa, 2018; Penna & Pessa, 1994; Pessa & Rizzi, 1987, 1988; Pessa & Trotta, 2008). Among the edited proceedings we mention (Minati & Pessa, 2002; Minati et al., 2006, 2008, 2015, 2018).

A dedicated scholar, invested in his work, Eliano also lived a full life and passed away on the 22nd March 2020, following a long illness.

His is greatly missed, as great is the feeling of emptiness his absence brings along. In an article for the Italian newspaper *Il Messaggero* (26 March 2020), Arnaldo Millesimi wrote: “Eliano always walked on the tip of his toes, in order not to tread on others, and on the tip of his toes he went away”. This is, to me at least, a most relevant trait of his personality.

Eliano was a dear friend, cordial, considerate, forward-looking, determined and remarkably competent. He was a mentor for entire generations of scholars, and a scientist ahead of his time, exploring theories that are still in the forefront to this day, such as the statistics of neural networks.

His legacy shall never be forgotten.

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