

In Giovanni's studio

Marco Gori*

Dipartimento di Ingegneria dell'Informazione e Scienze Matematiche, University of Siena, Edificio S.Niccolò, Siena, Italy

The best way to find yourself, is to lose yourself in the service of others.

—Mahatma Gandhi

On 2 July 2014 Giovanni Soda passed away after a long illness that had changed his body, not his clear mind. Full Professor at the University of Florence, Giovanni was undoubtedly the seed that generated developments in Artificial Intelligence at both the University of Florence and the University of Siena over the past decades. He had grown scientifically above all in the stimulating context of the Ulisse Dini Department of Mathematics of the University of Florence and had then arrived at the Faculty of Engineering, working on databases and teaching in the overall field of computer science.

Giovanni was driven by curiosity, possessed considerable intuition and looked beyond the horizon without dwelling too much on the scientific benefits of his skills. He was in fact one of the first researchers to dream of intelligent machines. After all, he loved the sea, which invites us to look beyond the horizon. At the beginning of the Eighties, while I was starting to familiarize myself with programming languages, Giovanni, on the occasion of the Programming Languages exam, proposed an exciting challenge to me and Alberto Tesi: writing an APL program to solve the Sam Loyd fifteen tiles puzzle. The problem had intrigued us to the point that we both didn't care about the fact that, in the best case, we would have spent much more time than normally required on the projects assigned for the exam. Giovanni guided us towards the use of informed heuristics, which in those years were starting to be studied in detail. We came

up with a rather effective solution. When Giovanni saw the program, he started playing with it. Faced with the disarming counter-intuitive and decidedly effective moves, he came out with an exclamation that Alberto and I would never forget: "Brilliant!" I believe that, on that day, he contributed decisively to strengthening my interest in the study of games and AI.

Professor Soda contributed with a lot of energy to the initiatives of the Italian Association for Artificial Intelligence, taking on various responsibilities, but, above all, accompanying, even behind the scenes, the Association's path, with valuable suggestions and constant commitment. I only grasped the value of his scientific vision later in the years, which he combined with the necessary humility of someone who can deeply grasp the meaning of scientific research.

When, during my PhD, we began to glimpse the connectionist and artificial neural networks wave, Giovanni understood its significance and strengthened my interest in studying something that, in those years, was decidedly orthogonal not only to the world of information technology, but also to that of AI. In Italian engineering schools at that time, the tradition of mechanic, electrical and electronic engineering were established in such a way that computer science was like a car which was given some parking space, with artificial intelligence just sitting in the back seat of computer science. Neural networks were locked in the trunk! Giovanni was not afraid to open the trunk and discuss the prospects of such unorthodox studies. It was necessary to push a methodological transition from discrete mathematics to continuous mathematics. Giovanni promoted the transition by

*Corresponding author: Marco Gori, Dipartimento di Ingegneria dell'Informazione e Scienze Matematiche, University of Siena, Edificio S.Niccolò, Via Roma, 56, Siena, Italy. E-mail: marco.gori@unisi.it.

effectively looking beyond, also and above all, stimulating the birth of neural-symbolic learning, which is recently drawing much attention. He understood, well in advance, what in current scientific discussions is called “explainable-AI”, also capturing the problems arising from the development of neural networks well in advance. After all, games, curiosities and challenges were always accompanied by healthy doubts, also about the impact of technologies on society.

Giovanni was a guide for me and for many others, not only along the paths of the world of science. He stood out for constantly being at the service of others. In addition to his pioneering insights into artificial intelligence, this is also what, ten years after his passing, keeps his memory alive within me and within many colleagues and students who had the privilege of meeting him.