



A Tribute to Panagis Panagiotopoulos

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“I do not have the will or the right to step on foreign land. All I know is to listen and look. To grasp the things that collide inside us or better still and with extreme care, grasp the messages born from the impact of life’s secrets on our souls.”

O. Elytis, In *Idiotiki Odos* Athens (1990)

Unique talent in a unique learning cum family environment, Panagis Panagiotopoulos (P.P.) was always ahead of his times. His course, expected for his standards... the silent champion. If someone were to understand him through his work, they might imagine an absentminded, wise man, lost in his own calculations. Professor Panagiotopoulos was a man who just like all mere mortals was distinguished by his idiosyncracies and his virtues, by his moments of greatness. For P.P., science and its functioning did not constitute an ideal space void of human weaknesses. On the contrary, often enough they possessed them to the maximum.

In my effort to talk about Professor Panagiotopoulos, my thoughts bend before they become words... because no adequate expression can be found for his academic and his human grandeur. A deeply inquiring, sharp, inspiring and unique spirit grew in a dialectic environment about the physical world and its mathematical description. From the first moment of his contact with research, Prof. P. saw far ahead, discerning the incomplete description of engineering problems together with the inadequacy of the mathematical tools used, as well as the absence of the appropriate algorithms needed to solve them. The abstract thoughts of the functional analysis and topology did not sidetrack him from the mission of the engineer, which is the practicable answer. The ability for a scientist to move, with such ease, between the peculiarities of the physical world, those of abstract mathematical thought and the utilization of new information technologies in order to obtain technical answers, made him unique.

The simplicity and depth of his thinking dominate all his work. From his first steps, his interests focused on the inequality problems of mechanics. With his gracious and effective combination of functional and convex analysis with the inequality problems of mechanics, P.P. opened new research paths in applied mathematics and mechanics thus, giving solutions to many engineering problems. Prof. P’s practical and inquiring mind quickly noted that the acceptance of convexity was too confining for real problems. He himself overcame this deficiency by expanding

the theory of convex variational inequalities to include non-convexity (based on the nonconvex subdifferential in the sense of F. H. Clarke). For this new field in engineering, he proposed the term ‘nonsmooth mechanics’ since he had freed it from the restriction of smoothness (e.g. non-differentiable functions are allowed in the general theory). With these new possibilities, P.P.’s school was confronted with complex nonlinear problems in mechanics, robotics, etc, and drew together, in the study of hemivariational inequality problems, international research groups with a strong theoretical background. His quests always continued with the same stoicism that was typical of him, e.g. the application of fractal geometry and fractal approximation on mechanics, the work on neural network models, the formulation of the non-convex variational theory for liquid crystals ...

All his research activities marked the subject of his quest ... His passion for knowledge, his directness in his collaborations, his rejection of authoritative mentality, his interaction with other people, his willingness to help and his belief that he could change the research environment in our country, resulted in the creation of an eminent research team in Thessaloniki, now known as the school of ‘nonsmooth mechanics’.

Prof. P’s contribution to all academic sectors was honoured by the best universities in the world, by various academies, academic journals, renowned scholars and most of all by the people he worked with.

His work was large, as was the indebtedness of his students towards him ... P.P.’s belief, that the charismatic Greek people would stand a better chance if the country’s educational system prepared its citizens to live in a society where the pathogeny would be restricted, and where its culture, environment and human capital were regarded as its wealth.

I had the rare fortune to exchange, these last ten years, my thoughts with P.P., on an almost daily basis, sometimes in my office, occasionally at Porto Marina, other times in the mountains of Epirus and the hangouts of my colleagues, in Pedini and as a matter of course, during our morning telephone conversations. In the beginning, the most important subject was to establish the appropriate research topics for my colleagues, so that they would be able to interact with other scientific sectors developing in our regional University, and instructions on how to prepare in these new fields. His international reputation and his passion to offer help to young people who showed will and ability for research, made it possible for me to invite, to our University, distinguished individuals who in their turn supported the investigative spirit of our colleagues.

During his frequent visits to our University, Prof. P.P. had endless conversations with them on subjects concerning their research as well as on those relating to academic ethos and culture. In his presence, we all came willingly under his shade ... His courtesy, his scientific frankness, his vast knowledge, his capacious memory, his humour, his human warmth ... captivated us. To the younger members of our team, he became a point of reference, while to me, being ten years older than him, my teacher and my adviser.

Prof P.P. envisioned an attractive university, linked to society of which it is its critical conscience. Steeped in the traditions of our people and fascinated by its aesthetic values he believed that in a beautiful and virgin region like Epirus, its university could and should play the role of a catalyst in the region's development. We proposed many necessary interventions required in Epirus, and drew a strategic outline for the development of the university based on the characteristics of the region. Five years ago, at his urging, I became involved with the administration of the university and he became a think-tank for problem resolution. Some of our top priorities were the establishment of a voice and data network for our University, the science and technology park, the inquiry into the search for resources to strengthen our scientific foundations, the restructuring of the development plan of the university campus. All were realized according to our plans. The region of Epirus became his region and he felt the need to serve it. Once, while commenting on the political situation of a neighboring country, we both speculated on the possibility of establishing the necessary infrastructure, which might strengthen the role of Epirus. Following this conversation, a proposal was drawn up for the creation of an Institute of Transport and Telecommunication based in Igoumenitsa, which is now well in hand and will be known as "Panagis Panagiotopoulos-Institute of Transport and Telecommunication".

We also planned to increase the awareness of the academic community of Northern Greece as a whole, as well as its political leadership to support its research web and its operation under one umbrella organisation. The reasons are well-known and the passion great ... still ...

His unbelievable talent to convince and his ideas, which triggered one's desire for action, were always accompanied by the analysis of possible risks and especially of the people who could (and the ways with which they could) hold back our vision. I would often hear him say, "Sincerity has not yet been introduced as a discipline...and ingratitude roams freely ..."

As a scientist, Prof. P. would always stress to all young people who were in his company that "the first and most fundamental principle is not to fool oneself – and you are the first and easiest person to fool". By not fooling yourself, you will, in turn, make it easy not to fool other scientists. The second principle says that while speaking as a scientist, one must be careful not to deceive the ordinary man. P.P. always talked about sincerity, which forbids lying and demands a constant revision of one's views in order to find one's mistakes "... this is our duty as scientists and towards other scientists and ordinary people".

His actions always carried this stamp of modesty. When, four years ago, during a telephone conversation of ours, he wished to tell me of a prize he was being awarded, he said quote, "I am being awarded the prize ... Agostinelli ... I am obliged to tell you ..." unquote.

His participation in various international, prestigious scientific committees allowed him to strengthen the Greek presence, since in his every thought, in his every action and in all his trips, he carried with him his country. In the Greek arena, his

presence gave prestige at recommendation committees. His imposing presence and his unhurried and well-structured answers with regards to scientific and educational matters, always contributed to the creation of the proper academic atmosphere for judgements based on merit. He was a model academic teacher. His rivals did not dare express their different opinions in his presence, because his humble expression, his thinking, his perfect classical education, his resourcefulness, his scientific stature and his imposing physical presence are sure to have been awe-inspiring.

Prof. P. was not only devoted to his science and to his environment of family and friends, but also to his origin and the traditions of the people ...

*“the roots of course, cannot be seen
however one knows
that it is from these that a tree holds on
To be just
think of the roots”*

It is in his father's homeland that he kept his voting rights, to have a point of reference and to preserve his roots.

His sensitivity for suffering academic communities and their people within Europe constitutes an example of his grandeur and his academic culture. He often stressed the need for the support of their research potential which, after the mishaps, will be summoned to inspire the future generations. His personal warmth and the whole environment of his laboratory made a place in which hope was given to many. In the international arena, P.P. was the protector of suffering researchers. His stature as a man and a scientist was marked by the grandness of his family warmth and stability.

As expected, his path in research was influenced by his first teacher and the European school of inequality problems which he attended. His fast academic progress made him an eminent member of his school (a real colleague for everyone) maintaining a deep respect towards the pioneers. In order to create an academic environment Prof. P. stressed that 'one must act based on the principles of tradition'. P.P. was the guardian of principles and of respect for cultural and academic continuity.

The work and life of P.P. is a deep well from which young people, his students, researchers and scientists can draw strength, daring, sensitivity, ethos and a spirit for research. One would always be surprised by his scientific knowledge, his well-structured way of thinking and the plethora of his interests and abilities. All those of us who were close to him: students, friends, colleagues and peers, discovered his devotion to duty, his sincerity, his directness and his genuineness. But above all, he was a friend.

Prof. P. was of great influence because of his extensive knowledge, his perceptiveness and his passion for truth. He dedicated his intellectual powers and his inner self to science and to human communication. The entirety of his work

confirms the well known thought of Heraklitus according to whom, "the Word does not say, neither does it hide, but it means". It should be a blessing to know that in a corrupted world, there still exist values which are honoured and held by the intellectual presence of certain honest, enlightened and responsible people, as was P.P.

A deeper goal existed in P.P.'s life, far and above the understanding of the times and of the world. It was the validation of perhaps the most important intellectual vocation, that of science in a world which is constantly tested and changed. P.P. will always be amongst us

In the dark of the night ...

He draws jasmine

To emerge a human world