

Professor Da Ruan, Distinguished Visitor at Complutense University, Madrid

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It is extremely difficult to maintain a strictly academic discourse about a colleague that unexpectedly passed away when he was a friend and when he has been playing a key role in your recent research activities. He will be deeply missed. In this short note we shall bring here some highlights of the relationship between our research team and Da Ruan, starting with our relationship with the International FLINS Conferences (see details of all the FLINS conference since 1994 at http://flins2012.itu.edu.tr/history_of_flins.html).

Since the beginning of the contacts of members of this Complutense University team on Decision Aid Systems with Da Ruan and his collaborators at SCK-CEN and the University of Ghent, the FLINS conference appeared for us as a singular conference, where practitioners and theoretical researchers could find an easy environment for interchanging knowledge and develop joint projects. FLINS initiative (acronym standing for Fuzzy Logic and Intelligent Technologies in Nuclear Science) was launched by 1994 in line with the Belgian Nuclear Research Centre (SCK•CEN) and the initial objective of giving PhD and Postdoc researchers the opportunity to carry out future-orientated research. Since then, objectives have evolved into much wider interests, covering now any research within computational intelligence and knowledge engineering in decision and control, still keeping the foundational declared objective of producing a real advance in the theory and applications of decision making and control for complex systems.

Since its conception, Professor Da Ruan put into the organization of each FLINS conference an extremely careful effort to facilitate such a scientific interchange, indeed keeping a kind attention for the needs of all conference attendants to create a good climate for communication. Coming to FLINS conference has been always a wonderful experience, both scientific and personal. Beside such a unique approach for a rather small but still somehow heterogeneous community open to any issue related to complex systems, a number of illuminating talks by colleagues come to our mind. But we have also to remind with pleasure all those scientific discussions we could have with colleagues during FLINS conferences, sometimes around a pot of Belgian mussels, or simple around a beer after the conference, or even walking along a beach or some historical site (needless to say, not taking care too much about the surrounding beauty because of the intense scientific conversation we were having). Such a kind of human relationship between the conference attendants created a quite familiar ambience, which can not be understood without Da's personality, his continuous smile and the devoted dedication of all his FLINS organization. Particularly, one of the authors of this short note will be always grateful to Da and the FLINS community for the kindness, support and friendship he found in some difficult personal times. We are proud of being part of his FLINS project.

¹ Javier Montero has been proudly acknowledged as FLINS Golden Pin (2004) and FLINS Silver Chair (2010), and has been honoured as Local Chair of the 8th FLINS conference held in Madrid (2008). Javier Montero would like to express his personal gratitude and admiration to Da's wife, Greet, who from her terrible moments helped him so much when he travelled from Spain to Mol, just to say goodbye to Da at the funerarium, a very sad trip.

² Begoña Vitoriano has been proudly acknowledged as FLINS Silver Pin (2008).

Da Ruan gave this research team at Complutense University of Madrid one of the most important moments: the organization of the FLINS 2008 conference in Madrid. The organization of this conference represents a cornerstone on the history of our research group. We learned a lot from previous organizers, we jumped in international visibility, and we sincerely enjoyed it very much.

The 8th International **FLINS** Conference on Computational Intelligence and Decision Control was held in Madrid (Spain), September 21-24, 2008, with the participation of scientists coming from 35 different countries and the presentation of 184 papers, selected in a strict peer review process from the 292 submitted papers. A short version of all accepted papers has been published in the **FLINS** 2008 proceedings, first issue of the World Scientific Series on Computer Engineering and Information Science. Moreover, special issues with selected extended papers were accepted after a second strictly peer-reviewed process according to the regular standards of five scientific journals: Information Sciences (special issue on Modelling Uncertainty, 2010), the International Journal of Computational Intelligence Systems (special issue on Soft Computing, 2010), the International Journal of General Systems (special issue on Soft Information Analysis, 2010), Mathware & Soft Computing (special issue on Computational Intelligence in Decision and Control) and TOP (special issue on Multicriteria Decision Making, 2011). The 2010 International Journal of Computational Intelligence Systems special issue, since then the official journal of the European Society for Fuzzy Logic and Technologies (EUSFLAT), represents a nice example of the spirit of FLINS, since it is a direct consequence of an intense discussion produced during a FLINS plenary talk, counting with the participation of P. Bonissone, H. Bustince, S. Guadarrama, J. Kacprzyk, L. Magdalena, L. Maguire, C. Moraga, W. Pedrycz, E. Ruspini, R. Seising, E. Trillas, L.A. Zadeh and Da Ruan himself.



The FLINS 2008 team

Based upon the basis of our previous collaborations and some joint projects, Professor Da Ruan joined our research project TIN2009-07901, funded by the Government of Spain. Da Ruan was currently member of this project, to be finished by December 31, 2012.

Moreover, Da Ruan had been recently entitled as “Distinguisher Visitor” at Complutense University of Madrid, based upon his past collaborations with our team and in order to develop joint research and design future joint projects. Beside the strictly scientific arguments towards his academic excellence, we wanted to take advantage from his continuous support to explore new initiatives within a sincere and friendly collaboration.

Complutense University is the biggest University of Spain in number of regular students (i.e., excluding those students from on-line courses). More than 80.000 students and almost 8.000 professors join Complutense University. The programme for Distinguished Visitors was created some years ago to bring to our University leading researchers that could help to launch new strategic projects. In order to be selected as Distinguished Visitor at Complutense University it is taken into account not only excellence in research, but leadership and ability to give in few months a definitive impulse to some strategic project. Professor Da Ruan got such a Distinguished Visitor ship for the course 2010-2011, and spent in our University two months, from first April to first June, 2011.

During those two months in Madrid, Da Ruan worked within our Decision Aid Systems research group into two main projects.

On one hand, Da Ruan worked with our aggregation working group, leaded by D. Gómez, studying the properties of consistency and stability of aggregation operators and obtaining some interesting mathematical results with potential implications in several fields. Some preliminary results have been published in several conference proceedings, put into a paper co-authored by Da Ruan, still under review (K. Rojas, D. Gomez, J. Montero, J.T. Rodriguez, D. Ruan: On the definition of some properties of consistency in the families of aggregation operators). In this paper it is shown the necessity of considering some consistency and stability definitions within some families of aggregation operators. Within this framework, Da Ruan also worked with us in the design of a COST European Project entitled “Integrated Uncertainty Analysis Theories for Complex Systems”, which will be hopefully submitted next January. The main aim of this project is to integrate various uncertainty analysis theories such as Probability Theory, Fuzzy Sets Theory, Intuitionistic Fuzzy Sets, Rough Sets, Data Mining, Possibility Theory, Lattice Valued Logic and Evidence Theory into a unique general mathematical framework that can deal with different uncertainty-based information such as incomplete, imprecise, fragmentary, not fully reliable, vague, contradictory and overloading in complex systems.

On the other hand, three additional main achievements specifically focussed on disaster management were launched during those two months of Da Ruan while in Madrid: a joint paper still on review process (J.T. Rodríguez, E. Turunen, B. Vitoriano, J. Montero, D. Ruan: A new continuous extension of Belnap’s four valued logic), an Atlantis Press-Springer edited by D. Ruan, B. Vitoriano and J. Montero still in the submission stage (Decision analysis and support in disaster management), and a ambitious project recently submitted for funding within the European Union framework. This Disasters Management working group is leaded by B. Vitoriano, which was the nominal hostess of Da Ruan as Distinguished Visitor at Complutense University, producing a couple of joint conference presentations (B. Vitoriano, M.T. Ortuno, J.T. Rodriguez, G. Tirado, J. Montero, D. Ruan: Decision aid models in humanitarian logistics, FuzzyMAD Workshop, Madrid, Spain, December 16, 2010; and B. Vitoriano, M.T. Ortuno, J.T. Rodriguez, G. Tirado, J. Montero, D. Ruan: Decision support systems for humaniatian logistic, Workshop on the Present and Future of Multicriteria Research, Madrid, Spain, February 1, 2011). Da gave this working group a view of the future, and accelerated (even more) our rhythm of research, launching us to risky and exciting academic adventures. Da gave us organisation skills and strength based upon an intense and extraordinary daily academic activity, still allowing room to deep and quite conversations about less technical issues, either professional or nonprofessional. Above all, he gave members of this working group confidence in themselves, confidence to tackle challenges. His visit marks indeed a before

and after in our Disasters Management working group. We were exceptionally lucky to have him among us. Da pushed this working group to request all previous and establish new strategic contacts in disaster management and closely related research fields, which has been finally fruitful in a consortium which has already began to act as a team.

All these experiences will prove to become steady collaboration projects, as Da made clear in the meetings he organized Madrid, where a number of prestigious researchers were enthusiastically involved in some of the above projects (another meeting had been scheduled in Malaga last September, and we had to sadly meet missing his leadership). Not having Da Ruan with us any more is indeed painful for us, and we have needed some time to recover from such a terrible shock. But we will make our best to continue his work and fulfil his vision. His work will be fruitful beyond all the above particular projects, simply because they will bring all its participants into joint long term projects, and such collaboration will bring highest objectives to be pursued. His departure left us puzzled, but the vision he brought to us will make us continue and develop all the projects he pushed with us, and that we could not have started without him. Yes, there is a before and after, thanks to Da this Disasters Management working group is greatly expanding, and we look forward to future attractive objectives.

Beyond our research group, Da impressed our colleagues in his several talks at our Faculty seminars, but also in his daily affability and proximity. Da continuously showed how to keep under control a number of variables, still creating a friendly environment from the first day, with no stress despite the overloading of work and meetings. A lot of researchers at Complutense University got benefits from Da Ruan visit. Thanks Da!

Sadness is difficult to avoid when an unexpected loss of a friend and colleague like Da Ruan happens. As his colleagues, we shall remind his outstanding work, his endless work and his devoted dedication to promote and support joint scientific initiatives. But as friends we shall keep in our mind lots of memories, his sincere friendship and his smile. We are proud that Da considered us his friends, and we are also proud of having the opportunity to share the above projects with him. Quite often our own busy life makes it difficult to realize to how much some people are influencing us, how relevant they are for our own life, how much they deserve to be admired as a human being. In this sense, it might be the case that Da never realized the extent of his influence in all those projects around him, and the deep gratitude many of us owe to him. The only sure thing is that Da was proud of his family. Da's life will definitively illuminate his beloved wife Greet and his beloved children Alexander and Nicolas, but also all those who pretend to continue his projects and took advantage of his wisdom. Our research team on Decision Aid Systems is one of them.